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THE GREAT INTERNATIONAL EXHIBITION.

THE subject of the Great International Exhibition, and its present and future consequences upon the mind and character of the age, not alone in Great Britain, but throughout the world, is one too vast to be speedily exhausted. Public opinion can as yet scarcely grasp it in all its magnitude.

Considered as a spectacle alone, the Inauguration was one which, for grandeur and magnificence, and for its effect upon the imagination, might bear comparison with, if it did not excel, any which the annals of the world can offer. The Building itself—the fitting shrine for the objects of mingled beauty and utility which it encloses—is as original and novel as the occasion; and if the ancient peoples had advanced far enough in civilization, and had possessed wisdom enough to conceive such a project as this friendly rivalry of the industrious workers of all climes and races, this Building would have been commemorated by the history and tradition of three thousand years, in the songs of bards and in the proverbs of the people, as a wonder of the world, worthy to rank with the Pyramids, or with the gates and walls of Thebes or Palmyra for its greatness, and with the Colossus that bestrode Rhodes harbour for its beauty. But the Crystal Palace has the merit of surpassing all these in the true nobility of the purposes for which it was erected. It is no vast monument of a still vaster pride and vanity, like the Pyramids; it is not, like the gates and walls of the ancient cities of the east, a bulwark against the encroachments of vindictive and rapacious enemies; nor, like the Rhodian Colossus a useless, although splendid, ornament of a great capital. Different from and more excellent than these, it is sanctified by a high purpose, the highest, indeed, known to that practical religion, which, including all objects of human interest, preaches not simply love to God, but good-will to men.

Though its iron pillars and its crystal walls are not constructed

THE "PRINCE OF WALES" MODEL FRIGATE.

OPENING OF THE GREAT EXHIBITION.—THE CHINESE MANDARIN, ETC.

for a durability that shall rival these great works of the olden time, its idea will remain to all coming ages, a living fact, endowed with a fecundity that shall produce the mere outward form of similar or still more splendid monuments of human progress in every quarter of the globe, whenever they may be required for a purpose so exalted.

The ceremonial of opening was as auspicious and imposing as the object was novel, and even in a time when people are but little inclined to let their imagination run away with their judgment, or to accept the grand and the indefinite for the small and comprehensible, the fancy of the coldest and most calculating of the spectators was warmed into enthusiasm by the scene. It was not alone the sight of a youthful and beloved Queen, surrounded by her family, lending the aid of an universal and well-won popularity to that solemn consecration of industry; nor the presence at her side of the illustrious Prince, to whose clear and comprehensive intellect and philanthropic heart the Exhibition owes its existence; nor that of the aged warrior—the most notable man in all Christendom, and to whom we are indebted for the repose that has enabled the nations to show that they can work as well as combat; nor that of the chief officers of a state compared with whose power and dominion the empires of old were but as provinces, that made the scene so imposing: it was not alone the presence of myriads of people shouting with "heart and voice" the anthem which speaks both the humble piety and the exulting loyalty of Englishmen; nor the concourse of strangers from every quarter of the globe, and especially from that great nation with whom our rivalry has always, until now, been on the bloody battle-field, nor the magnificent display of every conceivable article of usefulness or luxury invented by the ingenuity of men; nor the gay and brilliant appearance of the exterior of that Crystal Palace, glittering in the rays of a lovely May morning; nor the still more brilliant interior, realizing to the hard matter-of-fact men of Saxon England in the nineteenth century the gorgeous descriptions of fairy palaces born in the luxuriant imaginations of the Oriental story-tellers; nor the reflection that forced itself upon all minds how truly great and how full of good augury for all humanity such exhibitions might become hereafter; nor the pardonable exultation felt by Englishmen in the fact, that in England alone at the present day such an exhibition was possible: it was not any one of these facts, but a combination of them all, and of a thousand other circumstances equally significant and pleasing, that made the scene within and without the Crystal Palace, on that memorable day, the most affecting and cheering, as well as the most remarkable event in the modern history of mankind.

It has been well said of this Great Exhibition, that by its means the nations of the world have, for the first time, co-operated together in one peaceful act. This of itself gives it a grandeur and a solemnity which might atone for a thousand errors, if any such existed. To have brought about such a result is to have lived to a noble end, and to have conferred a benefit upon humanity; and to a share in this great achievement are entitled not alone the heads which planned, but the hands which executed it. To us it seems, while endeavouring to disentangle from amid the mass of reflections that force themselves upon our minds as we write upon this theme, that the co-operation of the industrious many of all climes and races in this work is a fact full of good promise for a future time. The co-operation of the world will not end with the year 1851, nor be confined to an emulative display of what each nation or section of a nation has done, or can do, in art and manufacture.

In the history of nations, as in that of individuals, physical facts always take precedence of, and are the forerunners of moral and spiritual facts. The workers of the world having shown each other how they can work, what cotton, linen, silk, and woollens they can spin, what metals they can fashion into shapes of beauty and usefulness, what ingenious and mighty machinery to defy space and time they can construct, what secrets of nature they can discover and turn to account for the service of humanity, what wealth they can create to please and flatter the senses and the intellect of all, will learn, that, if co-operation be good in this respect, it may be good also in another. They have exhibited in concert; the next step will be to work in concert, not alone in physical, but in moral and religious work.

When they take *that* step a new era will begin, and Utopia will no longer be an idle dream, but will take the form and substance of a possible fact. Once again, there is a handwriting upon the wall—not in the warning characters of "*Mene mene tekel upharsin*," but in hopeful words which seem to come spontaneously from all lips, and to shape themselves into the divine accents, "peace on earth, and good-will to men."

A GUIDE
TO THE
GREAT INDUSTRIAL EXHIBITION.

THE FOREIGN DEPARTMENT.

After having afforded our foreign partners, in the great Temple of Peace and Commerce, another week for completing their arrangements for unpacking, for marshalling in due order the many beautiful objects which, for want of time duly to display they had thrust out of sight during the ceremonies of the opening day, we resume our march of investigation by the same kind of rapid view of the eastern or foreign wing that we have already bestowed upon the British department.

For the imperfect preparation of our foreign friends there are many reasonable excuses to be found. They had far to travel; they were subject to all the delays incident to sea, to land journeying, to custom-houses, and to dependence on agents. In a new country, having to deal with officials and servants whose language was unknown or imperfectly known to them, every movement was necessarily slow and expensive. Besides, they were distracted by repeated rumours of adjournment, and restricted for obvious reasons in the number of men they could employ.

Our own countrymen, with all their advantages, would, many of them, have been terribly behindhand, if they had not been within a few minutes, or, at most, a few hours, of their workshops. As it is, many a Manchester, Glasgow, and London house was turned out of the Building before its work was complete, and had to pray for leave to prepare a second edition of their display for Saturday.

The great silk trophy contained within its ample tent fifteen men and ten women, all hard at work from Monday morning until half-past ten on Tuesday night, and then was barely completed.

There can, however, be no doubt, that the Royal Commissioners were quite right in adhering with rigid punctuality to the day originally fixed. If they had not, the day of opening might have been indefinitely postponed. From a week to three weeks is even now claimed by several foreign contractors, as the narrowest time within which they can appear in full splendour. Russia has scarcely anything unpacked, beyond a few vases. The greatest treasures of the Tuscan contribution are still fast in their packing cases; and on the day after the 1st of May, in the French and in part of the German department, hammers were going on busily, and shavings, sawdust, and musty hay were nearly as plentiful as they were a week previously.

INDIA.

Before passing into the Foreign Department, we must make a little tour through a department which represents a country where seventy millions of subjects acknowledge the sovereignty of England, which is even now one of our best markets, either to buy raw produce or sell British manufactures, and yet which, in spite of books, and pictures, and panoramas, is scarcely known to a very large part of our educated public, except as a land of elephants, tigers, cobra-di-capellos, shawls, and diamonds. Young ladies versed in French, Italian, music, and even the use of the globes, talk as if Bombay and Calcutta stood in the same relation as London and Brighton. Young gentlemen of unexceptionable manners and coats, if they think about the subject at all, class the ingenious Hindoo, practising arts his forefathers practised with the same skill centuries before civilisation had commenced in France or Britain, with the Bosjesmans or Ojibbeways.

Yet India is a country it is time we should all know, for it is perhaps the land in which there is more "*future*" for our commerce and manufactures than any other. Railroads have commenced there, and before long a double railway route through Europe, with the electric telegraph, will make Calcutta nearer to us in time than Berlin was a century ago. In the meantime, nothing could have been more opportune than a collection which is an exhibition in itself.

Although in the British department, we have a right to treat it as foreign, because nine-tenths of the contents will be new to nine-tenths of the visitors.

India occupies both sides of the eastern end of the Western Avenue entering on the transept.

On the northern side are a series of models of the ordinary country craft used in fishing, trading, and for piracy, some arms and saddlery.

On one side of the bay are a large collection of the iron, and on the other of the brass vessels commonly used by the native Hindoos and Mahommedans, some of them very elegant, and, as well as the pottery, forcibly reminding one of the form found in ancient Egyptian and Etruscan remains.

A little further on is a tent, composed of the most costly shawls embroidered in gold, covered with a variety of the richest praying carpets; chairs carved in ebony, with an elaboration of ornament which it is impossible to describe, are arranged about it.

Next, we find a set of Indian toys—probably exactly the same kind of toys that Indian children played with when British children were sold in the slave market of Rome, or even when Alexander the Great defeated Porus and crossed the Hindus, late the boundary of British power.

Ranged round a large table are more than 150 figures of every Indian trade and occupation; representations of many servants needed in an Indian household—the valet, the cook "frying a fowl," the pipe preparer, and all the infinite division of domestic labour. Then the trades: the barber shaving a dark man's head; two sawyers at work with a most primitive saw; a washer-man beating out clothes on a fluted board; a water-carrier, after the manner described in the "Arabian Nights," with his leather bottles. In the Tunisan division, a full-sized leather bottle, for carrying across a camel's back in the desert, may be examined. Peasants are shown, with the native machinery, putting a handful of sugar-canes between a couple of rollers turned by an ox; while, beside, are others boiling the sugar. What a world of intellect lies between this sugar-boiling and the elaborate machinery referred to in our last Number, in which the highest scientific powers have been brought to bear on the same subject.

A little farther on is a complete representation of an Indian fair, with the principal buildings, modelled with the exactness of imitation for which the Hindoos are so justly celebrated. Merchants expose their wares, camels unloaded repose, soldiers pile their arms, the juggler performs, the story-teller tells his tale, the horseman grooms his Arab steed; the elephant, with grass in his trunk, pricks up his ears as his master beckons to him; some smoke, some eat, a great lord rides through in state, a fakeer or saint begs—it is like a bit in an Indian romance.

Near at hand is a rice-field, with a man on a stage frightening away the birds. Among the buildings are a bazaar, a mosque, a temple, and a native house, as well as tents pitched, with their occupants.

Among the manufactures are ivory carvings, horn work, an alabaster chair, of great size, and imitations of all kinds of native fruits.

Costumes of great magnificence hang upon the walls. But perhaps the most interesting and useful part of the collection, with the exception of the figures of Indian trades and models of an Indian fair, is to be found in the southern bay.

Without dwelling, at present, on the beautiful jewellery, of which fine specimens may be seen in our shops, or the scimitars, tulwars, daggers, spears, matchlocks, camel guns, wall guns, and other deadly weapons, we push on where, first, lies an admirable set of models of the Indian implements of agriculture, in many of which we can trace the originals of our greatest improvements. These models have been manufactured by Native convicts. Carts and waggons, with open timber bottoms and sides, and solid wooden wheels (the axles turning round, as well as the wheels), are on the same plan as those still used in Spain and Portugal, the superiority of execution being on the Indian side. One plough has a seed dibbler attached, and, although lightly made, and only intended for soft soil, is superior in construction to ploughs we have seen in the south of France drawn by a donkey. The original of the clod-crusher, the scarifier, are all to be found; and two thousand years before two-horse ploughs came into use, the Hindoo drove his two buffaloes ploughing for rice with reins, without a separate driver.

Cotton-cleansing machines, and machines for grinding wheat, equally rude and ingenious, are there, and yet the style of execution of the models shows that, to bring about whatever improvement is possible, good copies to imitate only are needed. A Malay axe, with iron of the rudest workmanship, has a flexible handle, such as an American backwoodsman approves.

After the machinery, to which no brief description can do justice, come the rawmaterials, which—besides specimens of cotton indigenous and grown from New Orleans or Sea Island seed, hemp, flax, silk, and other known fibres—include a large well-arranged collection of the fibres of the aloe, the pineapple, and a number of plants unknown, or little known, in this country. Our intercourse with the Indian peninsula and archipelago is increasing so rapidly, that, in the course of the next ten years, steam-boats will be more common than sailing ships were twenty years ago; while we need not despair of seeing a locomotive running all the way from the island of Bombay to the heart of the Bay of Bengal. It would not cost so much as the expedition to and retreat from Cabul. In the meantime our botanists and manufacturers cannot do better than look out for new raw produce for these unlimited carrying powers to convey.

The cotton cloths are curious, but we dwelt longer on the model of one of those ancient looms, as ancient in principle as Joseph's coat of many colours, which the Hindoo weaver suspends from a tree, makes a hole in the ground, and squatting on the edge, drives the shuttle with his feet.

Precious stones and minerals, and various kinds of timber, rough and unpolished, are exhibited in quantity, and will, with other Indian products demand future notice and illustration.

EGYPT AND TUNIS.

Egypt, on the north side, just in face of the Koh-i-noor in its golden cage, pushes forward prominently long matchlocks, sabres, and large, flat, to us Europeans most uncomfortable saddles, magnificently embroidered in gold—just the sort of thing to set off a cavalcade under a glowing eastern sun. The broad flat seat seems much more calculated for the feats of Mr. Batty's equestrian hornpipers, than for the use of soldiers or huntsmen. Nevertheless, use is everything, and we know that the Arabs can ride

On entering the Egyptian department, we find one wall covered with drapery of violet, crimson, green, and blue silk garments, and crimson and green shawls, all richly embroidered in gold. The shawls will, we fear, create frightfully covetous feelings among our fair friends. Then there are embroidered slippers of various sizes, some small enough for feet never made to walk, but to be displayed, peeping out of the folds of Turkish trowsers—for these slippers have no heels, and the owner of such small feet would be sure to display them if a chance occurred.

It is quite certain that many of the articles of woollen and cotton exhibited could be made, and are made, of the same pattern, much more cheaply in England than in Egypt. On a table lies a large slab of beautiful yellow alabaster. A mosque has been built lately in Cairo of this material. On the alabaster slab stands a coffee-pot, which looks like rather dull block tin, surrounded by a swarm of little egg-cups reversed: on turning them up it is found that the metal is not tin but silver, and that each apparent egg-cup holds a little china cup. These are the famous coffee cups, in silver stands, which formed such a staple ornament in the Oriental novels, which followed the Byronic mania, before "Pelham" and "Pickwick" put murder in a turban to the rout.

One of the walls is adorned with fans of peacocks' feathers, very like English fire-screens; but these fans in Egypt are not mere ornaments, but genuine necessaries, and so are the fly-flappers of grass. Among the raw materials are cotton, cassia, and a variety of drugs and timber. A lump of alum awakens strange ideas. It is marked in French, "Alum from the Great Oasis, refined at Cairo." Who would have expected, twenty years ago, to have a bit of the Great Oasis exhibited in Hyde Park, with other articles, to be explained by an intelligent Egyptian speaking capital English?

There are some sickles and hoes, exceedingly rude, and wasteful of labour. We should like to know the value of them: if not home-made by a "Fellah" without money, they must be dear at any price. One cannot help wondering whether the railroad between Alexandria and Cairo, planned by Robert Stephenson, is to be made by Coptic or Arab navigators with such tools as these.

Among the articles for use, are saddles for an ass, a horse, and a camel. The sight of the camel saddle gives one the back-ache. The common horse saddle, quite soft, without any tree, made of leather, with a lining of several rows of felt, is worth the attention of our southern colonists, where horses have no shoulder to keep the saddle in place, and are liable to sore backs.

The raw produce—vegetable and mineral—of Egypt is more important, no doubt, than the manufactures, but, of course, it makes little show.

Tunis contributes largely. Amongst other things, there are some extremely fine floor-matting, and a magnificent collection of gold-embroidered dresses.

In the centre of the court is a real Arab's tent, of black camel's hair, a stout, useful material, which does not, however, realise the words of the song—

> Come to the desert—come with me;
> Our Arab tents are fair to see.

Skins of lions, leopards, antelopes, and wild goats appropriately adorn this tent. Within it are arranged rude husbandry tools, hay-forks, such as school-boys make of a forked stick. There are also the Arab musical instruments—a fiddle with two strings, and a guitar, or African banjo. Candles of brown wax, of a taper, crooked, dip shape, hang among other household treasures. We particularly noticed some straw hats, literally as large round the brim as a coach-wheel, and so wide in the head, that we presume a turban or cap goes inside.

The general impression produced by the survey of the productions of such countries as Egypt, Turkey, Tunis, and native India, is the same; that is to say, that the more civilised nations excel most in common comforts—comforts which all classes may enjoy. In splendour of costume, jewellery, and arms, in pageants and processions, we find it hard to approach people who do not carry pocket-handkerchiefs, and have not much to do with the washerwoman.

PORTUGAL.

Portugal, in arrangement as in geography, stands next to Spain, with a kind of sign in front, as a set-off to the huge Spanish water-jar, in the shape of a great dripstone from the island of Terceira, which is said to possess powerful filtering qualities. Truly it could not have been sent to a place where it was more needed than the banks of the Thames. Opposite the Portuguese, close to Tunis and China, stands a vase of feather flowers from Portugal's former colony of Brazil. These flowers are made from the natural feathers of the birds of the country, undyed, intermixed with the scales of diamond beetles. Besides being excellent imitations, they are very lasting. Among the contributions of Portugal are specimens of indigenous marbles, preserved fruit, grain, barrels of snuff (from which a pinch may be taken), cotton and woollen cloths, and other fabrics, of which the less said the better, and an exquisite carving in ivory of "Prometheus devoured by a Vulture." The anatomical development of Prometheus is admirable. The feathers of the bird are better than the form.

SWITZERLAND.

From Spain and Portugal, to cross to Switzerland, is, perhaps, in every respect, as great a change as possibly can be imagined. We have before us the products of a country without colonies, without a sea-coast, unfavoured in sun or soil like the Iberian peninsula; but industrious, educated, intelligent, self-dependent, and enterprising. Switzerland displays little raw produce, but great excellence in manufacture. A considerable space is occupied by cotton and similar goods, which will be more properly noticed in a general comparison of foreign textiles. Beautiful straw plait, wood carvings of great delicacy, both ornamental and useful, shapes fit for fancy dairies, bows and arrows, and a crowd of ingenious trifles, show how part of the rural population are occupied during the long winter months. In the gallery over the Swiss cottons, &c., the celebrated Geneva watches are exhibited in great force—watches for the deaf and blind, a watch which runs with one winding 374 days; a watch, smaller than a fourpenny-piece, to hang in a serpent brooch; one still smaller, in the top of a gold pencil-case, tells the hour, day of week, and month. With the watches are exhibited many curious and valuable philosophical instruments; and, descending again, we find some examples of the musical boxes, which, thirty years ago, were the pocket companions of every Continental traveller on his return to England. Among the watches are exhibited the separate parts of a watch. The cheapness of Geneva watches is produced by a great division of labour, and the low price at which work is done by the families of the small freeholders in the winter evenings: the works are afterwards put together and finished in the towns. The Swiss watches have great advantages in delicacy, minuteness, beauty, and cheapness; nevertheless, the strong English watches were never in more brisk demand for foreign export than at present. At Coventry, the great seat of the trade, every man is in full employment.

We must not pass over without mention the Swiss embroidered curtains, ribands, and velvets. Indeed, there is scarcely a single branch of manufacture in textiles, in metals, in pottery, of which they have not sent creditable specimens.

Next to the watchmakers' and jewellery work, models and carvings in maple and white wood will amuse those who take no interest in the progress of more serious manufactures.

ITALY.

Italy stands between Spain and France, but, unlike Switzerland, is a yet not half prepared for receiving company.

Tuscany, with many cases to unpack, represents Italy for the present, with a more striking display than any other state of the Peninsula. The centre of the room is occupied by several very beautiful tables of mosaic, of hard pebbles on marble or lapis lazuli, the finest from the Royal manufactory. Several clever imitations of the mosaics in wood stand round. A remarkably ugly carriage occupies a conspicuous position. A set of those anatomical preparations for which Florence is so celebrated, presented by the author to Professor Owen are arranged in glass cases. In this instance the whole internal economy of the torpedo, magnified on a large scale, has been modelled with extraordinary fidelity. The minute blood-vessels are faithfully re-produced, in a manner which must be in the highest degree useful to the naturalist and to the anatomical student, without being at all disgusting.

On one side of the room stands a cabinet carved in black walnut in 1845, of very great merit for the elegance of the design and delicacy of execution, which may probably form on a future occasion the subject of

·n illustration; and there are several chairs and other pieces of furniture in the same style.

The mineral specimens include ornamental stone, lithographic and coloured stones in great variety found in Tuscany, and used for mosaic-work; specimens of alum, sulphur, copper, antimony, and quicksilver.

The vegetable produce includes wheat, from which the well-known Italian pastes are made; of that from which the straw for the bonnets, known as Tuscan and Leghorn is manufactured. In examining the manufactured articles, we find that Messrs. Vyse, who employ so many hands in straw plaiting in Hertfordshire and adjoining districts, have also an establishment in Tuscany.

It will be remembered, that when Sir Robert Peel explained the plan of his famous Budget, he made efficient use of a bundle of Tuscan straw plaits. He showed that such an article, varying in quality according to fineness and lightness, so easily packed in a narrow compass and concealed would never pay or be excluded by a high duty.

There are specimens of Tuscan plait exhibited almost worth their weight in gold.

Then, again, the Tuscan oil, which in the straw-covered Florence flask, now going out of fashion, has given a name to all the table oil we consume—and we consume more and more every year, coming from various countries—is ranged in bottles, which, as they are neither to be smelt nor tasted, do not say much for themselves. But still, the untravelled have the satisfaction of thinking that for once they have seen the genuine article.

The animal produce division gives us more specimens of merino fleeces and silk from more than a dozen silk manufactories.

Merino fleeces form part of the Tuscan exhibition. If the resources of Italy were properly developed, it ought to export a very large quantity of wool, as the pastures are plentiful and the climate suitable.

ROME sends nothing very remarkable, beyond some of those exquisite cameos which have never been excelled elsewhere; and, whether from indifference to the Exhibition, or from exhaustion, gives a very poor idea of the resources of the Papal dominions, even as compared with the Mohammedan state of Tunis.

SARDINIA.—We turn with interest to the 94 contributions of this kingdom, which includes in its territories Piedmont, Savoy, Genoa, and the great island of Sardinia, because we not only sympathise with the people in more points than one (it is the only constitutional kingdom left in Italy), but because we have recently concluded an advantageous treaty of commerce and navigation with the King of Sardinia, which is likely to largely develop the resources of his kingdom and to increase our intercourse with it.

The principal exports of the continental states of Sardinia are silk, hemp, oil, and cork. Rice and wine are grown, but not exported to any extent, although, whenever we reduce our duties on wine, we may expect to receive some.

The island of Sardinia is rich in timber trees and minerals, besides having a soil and sun suitable for the vine, olive, tobacco, flax, hemp, and a variety of produce; but oppressive laws, great ignorance on the part of the people, an ignorance which is carefully cherished by the priesthood, a malaria existing in certain of the most valuable districts, and the want of roads, have left Sardinia more than a century behind the north-western states of Europe.

The present Sovereign of Sardinia is anxious to unloose every restriction on internal and external commerce; and it is to be hoped that the specimens sent are but the heralds of a more complete collection for our second Exhibition in 1856.

The only objects that are very prominent are a huge elk, from the museum at Turin, stuffed with great skill, and carved furniture, the property of the King.

Of course, there are specimens of raw and thrown and organzine silk, of that mythic article, Genoa velvet (almost all the velvet we consume is made either in Lyons or Spitalfields, or one of our manufacturing towns of the north); also wax and olive oil.

A pair of postillion's boots cannot be passed over, they are so extremely comical; and Turin contributes, with other silver filligree work, a column ornamented with emblems of the "Great Exhibition."

A very jolly bacchante, in marble, of Sardinian authorship, dances in front of the Italian Court.

SPAIN.

Spain stands next to Egypt, with a magnificent supply of deadly weapons—swords of true Toledo manufacture; a pair of rapiers—one of them, as to handle and sheath, fashioned into the shape of a silver serpent. When sheathed it forms a complete circle, and when drawn, such is the perfection of the tempered steel, it straightens at once. Then there are all manner of deadly daggers, with handles of wonderful magnificence. But the gems of the case of arms are two pairs of pistols, in wrought iron, damascened over a gold ground, worked into fantastic figures and forms, as delicate as filigree, from the butt to the muzzle: not a single hair's-breadth is unornamental—they are perfectly wonderful; we have never seen anything in this country, or in France, like them; it reminds one of Benevenuto Cellini's work. There is also a metal book-cover, intended to hold a title of nobility, in the same style of incrustation of gold and silver on wrought iron.

A case, very nicely arranged, contains samples of raisins, figs, silk, oil, Indian corn, wheat, tobacco, and other agricultural productions of Malaga.

We cannot much admire the execution of the shrine in gilt metal and precious stones; but a table ornamented in wooden mosaic, with wreaths of flowers and the arms of the Queen in the centre, with "A S. M. Victoria de la Gran Bretana," is exquisite in design and execution. It must, if the time of its execution be considered, be beyond all price. It is said to contain three million pieces of wood.

A model of a bull-fight in an amphitheatre filled with spectators, occupies a conspicuous situation, and tells the story well; but we are not quite sure that it is of Spanish manufacture, and for the following reason—both France and Germany carry on a trade with Spain in toys. Some short time since, a grave report from a German Minister of Commerce went the round of the German papers, setting forth that the German toys had been beaten out of the Spanish market and returned on the hands of the manufacturers unsold, in consequence of the superior correctness with which the French had represented the ceremonies of the bull fight, for the benefit of the Peninsular nurseries. Under these circumstances, German artists had been instructed to prepare in Spain a correct series of drawings of every incident in tauromachia, which were to be lithographed and distributed among the toy manufacturers.

In glass cases hang black lace mantillas of the most aggravating perfection, and embroidery quite unapproachable in any country where reading and writing are much practised. After looking at the Spanish embroidery, our Berlin wool and crochet damsels may fling away their needles and hooks in despair.

We must not pass over a set of little figures, representing Spanish characters, with a genuine Spanish expression of countenance. The sort of figure is common enough, but the execution of these is extraordinarily clever.

There is a "contrabandista," or smuggler, sitting on the croup of his loaded mule, lounging forward with a cigar in his mouth; at his side a carbine, ready for use; and a devil-may-care expression on his countenance, which, although only a chimney ornament, is quite a work of art as regards reality: it must be a portrait.

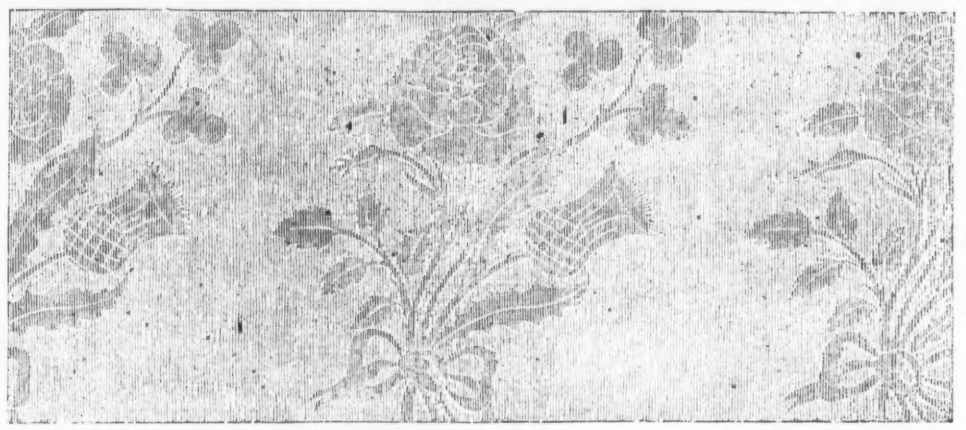
RAW MATERIAL.

The strength of Spain, if that unfortunate country could but know it, lies in her natural productions, agricultural and mineral, and their simple products. The manufactures of Spain are mere shams or curiosities. It is well known that England, France, and Germany manufacture all sorts of woollens, cottons, and hardware goods after Spanish models, which are afterwards smuggled into that country by brothers of the smoking, lounging, gentlemen just described.

An excellent series of illustrations of the natural wealth of Spain have been sent. The inspectors of mines of each district, whose names seem legion, for Don Juan is always helping Don Carlos to do nothing, have sent each a collection. These include iron of the finest quality. We were large importers of iron from Spain, until we perfected the method of smelting with coal; and, at the present time, iron ore, fit for making the finest steel, exists in large quantities, if there were roads to convey it cheaply to the coast. Also, lead and silver, quicksilver, copper, antimony, cinnabar, nickel, and numerous minerals of chemical value, as well as a fine collection of marbles of great beauty.

AGRICULTURAL PRODUCE.

The agricultural collection is equally varied and valuable, affording an excellent idea of the rich variety of the Spanish soil and climate.

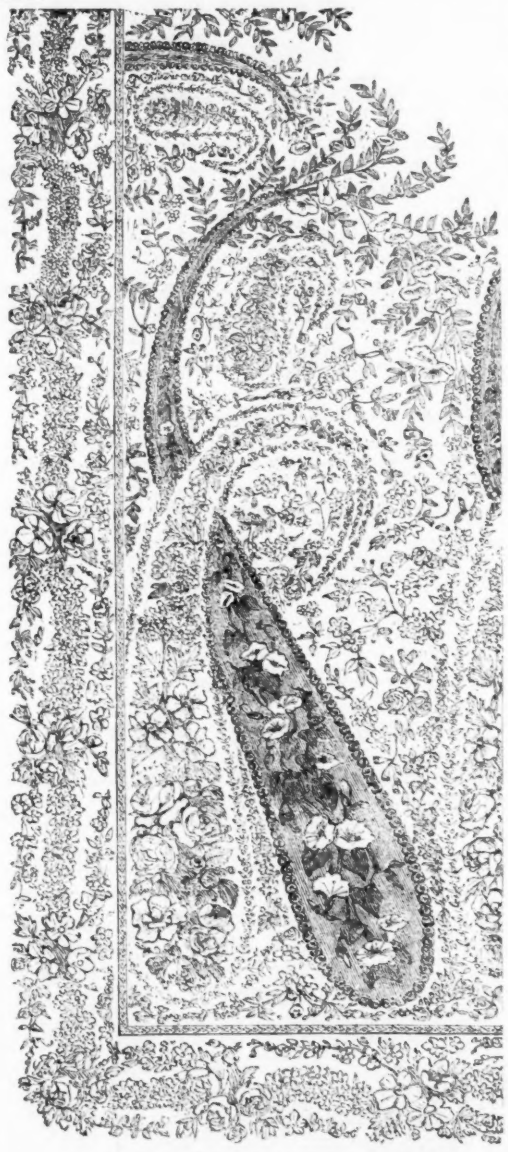


1.—IRISH TABARET.—BY ATKINSON, OF DUBLIN.

There are specimens of wheat and barley from every district; of maize, of buck wheat, of rice, of every kind of grain, of tobacco, of cotton. In fruits, olives on branches of several kinds, besides chesnuts, extraordinarily fine walnuts, dried fruits, such as peaches, oranges, citrons.

Among dye stuffs, in great variety, a large specimen of the barilla plant.

From the Spanish colonies we have a complete series of specimens, scientifically arranged, of the timber woods of Cuba and the Philippine Islands.



2.—SHAWL PATTERN.—BY JAMESON AND BANKS.

A vast earthen jar from Toledo, large enough to hold half-a-dozen robbers, and to puzzle a Morgiana to fill, stands in the central avenue, and gives a hint of the wine-producing powers of Spain. There are excellent wines, which, for want of cheap carriage, never leave the country.

ANIMAL PRODUCE.

Among the animal productions are cochineal, many specimens of raw silk, and wool from the choicest merino flocks, washed and unwashed. The wool is enclosed in cases. We hope an opportunity will be given of handling and comparing it with samples from choice German and Australian flocks. Half Yorkshire depends for mixed fabrics, and nearly all the West of England for fine cloths, on the Spanish breed of sheep, but not on Spain.

Up to the year 1800 all our fine wool came from that country. The trade has almost entirely disappeared. We now obtain our finest wools from Germany, where the Spanish sheep are housed all the winter, and tended with a care which compensates for the defects of climate. The best part of a first-rate Saxon fleece will sometimes be worth six shillings a pound.

Our great and annually increasing supply of fine wool is from the Australian colonies, where the Spanish breed, introduced by Macarthur, and crossed continually with the best German and Spanish rams, with little care and expense, produces a wool which, although not equal to the finest Saxony or Spanish merino, enables our manufacturers to produce a variety of new and beautiful fabrics.

The Spanish proprietors of thorough-bred sheep form a sort of corporation, ruled by ancient exceptional laws, and endowed with privileges which are fatal to the progress of agriculture in a great part of the kingdom. At certain periods they have a right to drive their flocks, feeding without compensation, for hundreds of miles, and to return the same way. This privilege was given, no doubt, in order to afford a change of climate and pasture, very advantageous to the fleece, but adverse to any improvements in agriculture.

The strictly exclusive and meddling system of Spanish legislation has ruined all existing, and prevented the establishment of any new, occupations. We can illustrate this by the experience of a friend of our own:—

AN EMIGRANT IN SPAIN.

A colonist, who had returned from Australia, took a journey into Spain, soon after Sir Robert Peel's tariff permitted the importation of foreign cattle.

He liked the country, liked the people, found plenty of pasture to be had at a nominal rate; thought he saw his way to an exportation, and made up his plans accordingly. He said, "I will import an English thorough-bred stallion, a short-horned bull or two, and some south-down rams. I will breed lambs from a cross of the Spanish American (not pure merino sheep); I will lend my rams free to the farmers, buy the lambs from them, and, having cut their tails, send them to England. They will pack well on a steamer, and arrive to sell at a good profit, just at the time of the year when house lamb costs half-a-crown a pound. I will cross the Spanish mares, and breed horses of a good sort for Spain and for French cavalry. I will herd them as we do in Australia, in 'mobs,' with a stockman to look after every 200; and they will cost me next to nothing for keep up to three years old." His cattle plans were equally pretty; but our pastoral Alnaschar had forgotten what country he was in. He consulted a friend—a Spanish merchant: he smiled and said, "You dream, my friend: you are not in England, or in an English colony. In the first place, you will not be permitted to cut the lambs' tails; it is not our custom. In the next place, you will not be permitted to import foreign rams: it is contrary to law to cross the breed of sheep. In the third place, if you breed horses, the Government has a right to take as many as it pleases for cavalry, at a fixed price, which will not suit you, after importing your fine English horses. And, finally, you cannot count on pasture for your flocks or herds, for the part that you have chosen is just in the way where half a million noble blooded merinos have the privilege of marching."

We relate this anecdote, because, after studying the magnificent natural resources of Spain, as displayed in our Exhibition, it is impossible to help wondering why such a country is not populous, flourishing, and wealthy. But customs and prejudices are more powerful than laws, and it would be easier to change the dynasty than to establish a common-sense system of internal and external commerce in Spain. As it is, we send copper vessels disguised as iron, and make woollen and cotton goods in Spanish fashion and marks; for the smuggler is the great protectionist of Spain, and insists on his vested rights, to the exclusion of good roads or remunerative customs duties.

As the produce of foreign contributors is arranged geographically, and not in classes, and the name of each country is written up plainly, there is no need to give a diagram, which would merely copy plain figures, especially as the galleries of the east side are nearly unfurnished.

THE BRITISH DEPARTMENT.

SILK MANUFACTURE.

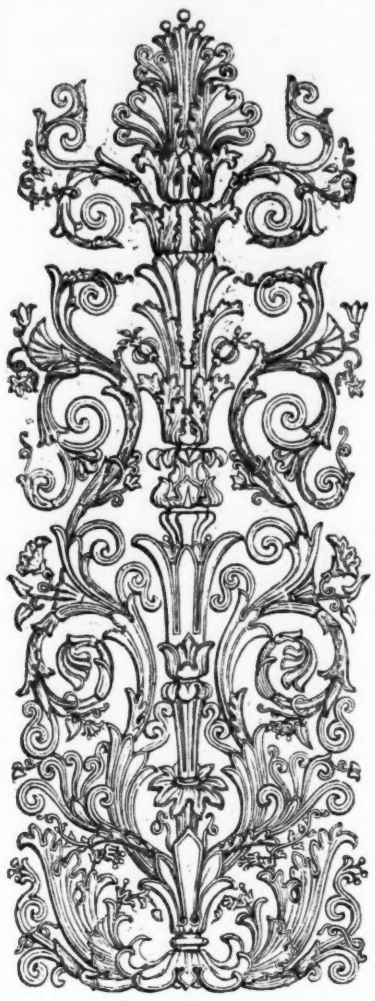
THERE are few departments of the Exhibition which will be examined with more interest than that of the silk manufacture, since it is one of those in which the well-known reputation and long tried skill of our French neighbours will subject us to the severest test. Many well-meaning and intelligent people believe that, as regards our silk trade, if in no other department of manufacture, this Exhibition would have a fatal tendency; since it would inevitably show us the poverty of our own productions, especially in an artistic point of view. Spitalfields was lukewarm, if not positively hostile. Macclesfield could not see its way until the eleventh hour; and it was only the fear of being absent, and thus suffering judgment to go by default, that led to any movement in either of these localities. Manchester and Coventry had some hopes that there might be points in which they might excel, and consequently set about the work with more spirit and determination, and the fullest possible intention of winning if they could, but, if beaten, that it should not be for want of a trial.

Without claiming for our silk manufacturers any superiority of excellence either of taste or judgment, it is not too much to say that there are points in which they certainly stand pre-eminent; and when the question of quality is discussed, no one need fear for the results. Of late years there has been a constant tendency to avoid the production of decorated silks, and pay more and more attention to those of a plain character. This has arisen since the period at which the restrictive duties were taken off French silks; and the manufacturer, who formerly depended upon his clandestine means for obtaining patterns of these foreign productions, and using them as designs for his own trade, was compelled to forego his piracies, and depend upon some original source. Now, unfortunately, he had altogether neglected the cultivation of the taste and talent around him; and in his hour of need the slender artistic means which he had been compelled to provide for the purpose of copying, failed him as a source of that originality by which alone he could hope to stand.

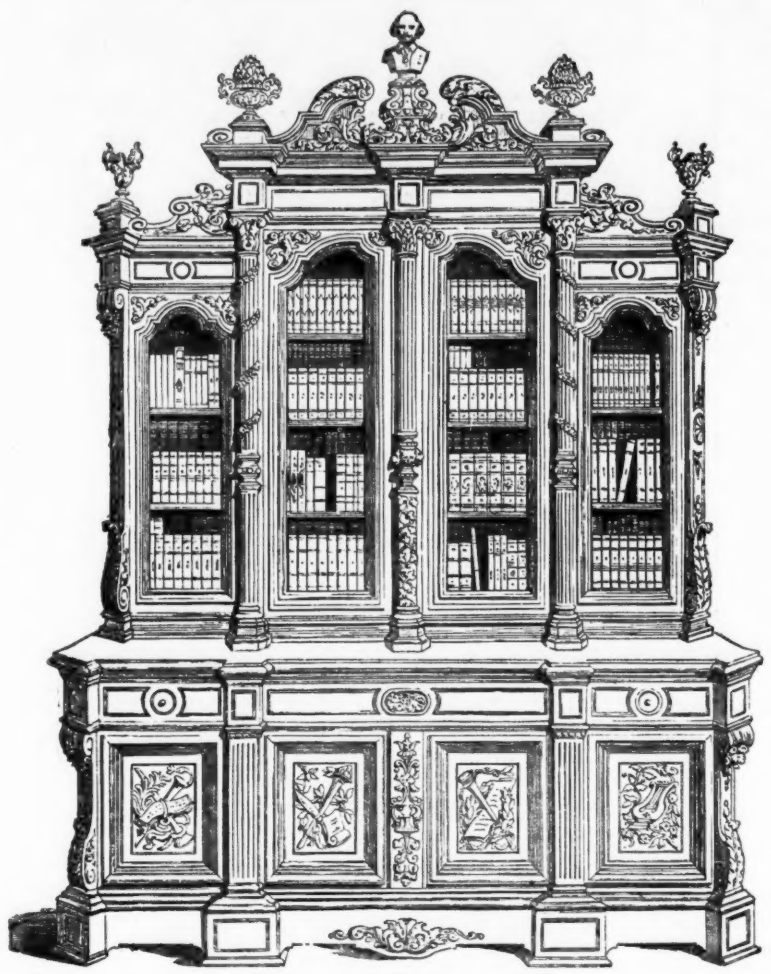
The disquietude, therefore, of the silk manufacturers of this country, and more particularly of Spitalfields, is to be accounted for in the fact that they were totally unprepared for such a competition as that in which they were called upon to take part; and having been so long used to depend upon others rather than upon themselves, they were certainly not in the best possible condition to exert themselves with any effect.

The display before us, however, only serves to prove how much more might have been done had this habit of self-reliance been cultivated a little earlier, and the innovations of taste been regarded rather as a means whereby an extension could be given to trade, than as ruinous to certain exclusive interests which were never, after all, really benefited by the so-called protection afforded by antique restrictions.

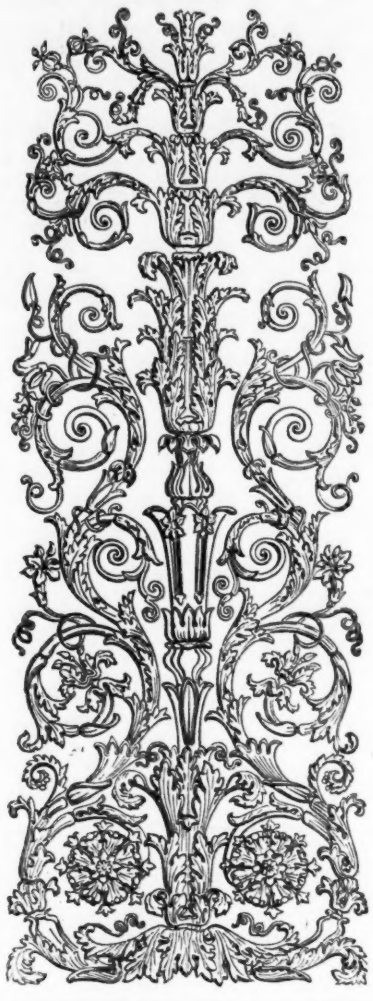
Ascending the first staircase on the south side of the western nave, the examples of British silk manufacture will be found to occupy the gallery immediately at the head of the stairs, north and south. The Spitalfields or metropolitan silks, and the Coventry ribbons, being displayed in glass cases next the nave, and the Macclesfield and Manchester productions in a parallel line on the other side of the staircase. Nearly every class of silk goods is represented, and manufacturers, wholesale and retail dealers, are strangely enough found in competition, or at least in comparison, with each other. Messrs. Campbell, Harrison, and Lloyd, of Friday-street, City, exhibit some excellent specimens of figured moiré antique damask, rich brocades, and velvets. Stone and Kemp, Spital-square, a rich assortment of plain and fancy silks. Isaac Boyd, some admirable specimens of silk furniture damasks; and other houses keep up the reputation of Spitalfields for parasol silks, gros-de-Naples, satins, and velvets. Two specimens exhibited by the Spitalfields School of Design, as the production of pupils of that institution, are practical illustrations of its utility when properly directed. The crowning representation, however, of Spitalfields is the trophy in the central avenue, alluded to in our last, of which an Illustration is now given. This richly-clothed and decorated object forms a decided feature of the Exhibition, and consists of a parallelogram of mirrors with a wing at each of the angles on which are draped the richest furniture damasks, well effective are



3.—DESIGN FOR PANEL.—BY W. A. PAPWORTH.



5.—CARVED BOOKCASE. SOCIETE DES EBENISTES.



4.—DESIGN FOR PANEL.—BY J. W. PAPWORTH.

effective colourings. The structure is divided into three tiers, and rises to the height of forty feet, above which are placed the flags and banner. The lower tier displays the broad silks of the largest patterns; and at certain angles these are reflected in the mirrors; whilst selections of silks are arranged upon a plinth which supports the whole, an ornamental *fascia* completing the first compartment. From this rises the second tier, in which, however, too many silks have been crowded, and the effect is lost in consequence; but, as the defect is easily remedied, we trust it will be done at once. The arrangement, too, should be more loose and pendent in its character, thus giving ease to the folds of the drapery. This remark applies especially to the upper tier, in which the less costly, but, in some respects, the more showy goods, such as striped tabarets, are placed. The pieces are drawn too tight, and give a stiff and formal effect to that which, with a little consideration, or less hurry in arrangement, might be made tolerably graceful. Great credit is due to Messrs. Keith and Co. for the spirit and energy they have displayed in taking up this costly illustration of their trade single-handed; and the examples of silk of which it is formed are, with a few exceptions, equally creditable to their skill and taste as manufacturers. (See Illustration on next page.)

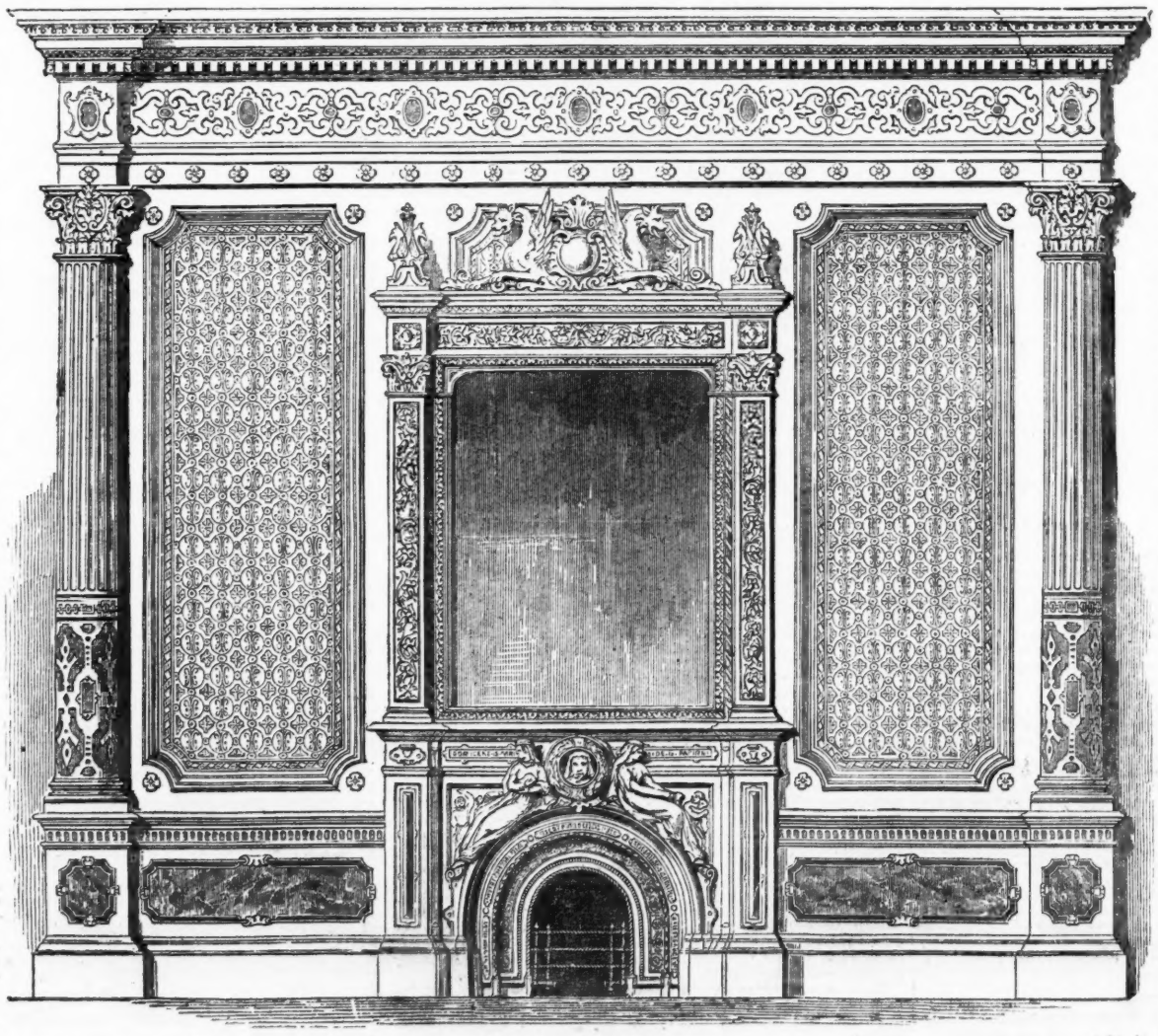
Messrs. James Houldsworth and Co. are the principal exhibitors of silk from Manchester. Their specimens are all of a very high character. The large silk banner which occupies the centre of their compartment has been executed specially for the Exhibition, and is composed of silk grown and manufactured in England. It is intended as a memorial of the late Mrs. Whitby, of Newlands, Southampton, who devoted so large a portion of her time and fortune to the promotion of the growth of silk in England, and has been manufactured by Messrs. Houldsworth for her friend, Mrs. Wist. In our more detailed notices we shall return to this interesting example.

The embroideries by machinery, for which Messrs. James Houldsworth and Co. have been so long noted, are here displayed in all their accuracy of "repeat" and brilliancy of effect; and this house sustains its reputation in a most satisfactory manner, the arrangements of the display being at once tasteful and effective.

Messrs. Whitworth and Proctor's specimens, of a totally different class from those last quoted, are very admirable, and will bear, as they deserve, a close inspection. Messrs. Harrop, Taylor, and Pearson's goods, which fill a glass case of similar design to that of Messrs. Whitworth and Proctor, thus balancing the arrangement on each side of Messrs. Houldsworth, are of a class for which Manchester is noted—plain silk goods of excellent quality at a comparatively low price; and it is as specimens of this class only that they are exhibited.

At the back of the Manchester specimens, a miscellaneous collection of examples in silk and silk manufactures is placed. In the centre, and occupying the largest portion, are some very excellent examples of furniture damasks, manufactured and exhibited by Mr. William Grosvenor, of Kidderminster. One example, a brocatelle, will require special attention at some future time, when we hope to give an Illustration of it. The other exhibitors comprise those from Leek and Derby; and an interesting case of illustrations of the growth and process of silk manufacture, from the eggs of the silkworm to the finished goods, by Messrs. Hadwin and Sons, Heyroyd Mills, near Halifax; with specimens of dyed silks by Holdforth and Sons, of Leeds.

The Macclesfield exhibitors are grouped together in a large glass case at the head of the stairs; and the special productions of that town are worthily represented by Messrs. Brocklehurst and Sons, H. and T. Wardle and Co., and Critchley, Brinsley, and Co. Ladies' silk handkerchiefs and small silk shawls being the leading features, there is nothing especially suited for illustration. Of the colouring of many of the specimens, however, we can speak in the highest terms of commendation.



6.—WALL DECORATION.—BY. C. MOXON.

RIBBONS.

The staple productions of the ancient city of Coventry, as already stated, occupy a prominent situation in the Central South Gallery, next to the nave, and are displayed in a long glass case, of more pretension to architectural beauty than has been realised in its construction. Of the display here made it is only right to premise, that Coventry has hitherto aimed at manufacturing cheap ribbons, in which great effect is obtained at the smallest possible amount of labour and the minimum quantity of material; and the examples here shown are, with very few exceptions, intended to illustrate the regular manufacture of the various houses who have united to make this exposition of the ribbon trade. Each of the leading firms is represented, and each has endeavoured to display the leading features of its own special trade. Thus, Messrs. Sturdy and Turner exhibit samples of ribbons remarkable for beauty of design and the application of steam power to their manufacture; and Messrs. Sharpy, Odell, and Jur exhibit illustrations of a medium quality of goods manufactured at Coventry. In order, however, to show how far the ribbon weavers of Coventry are capable of going beyond the ordinary character of goods upon which they are usually employed, and by the manufacture of which the commercial status of that city is kept up, it was wisely resolved, by a few spirited individuals, that a ribbon should be manufactured, and the cost of its production be defrayed by subscription, in order to ensure the production of such a specimn as would prove the capability of the Coventry workmen to produce better things than they usually have credit for, and to show that the element of price was always to be considered in the production of excellence. The ribbon thus manufactured, under the especial superintendence of a committee of manufacturers appointed for that purpose, is exhibited in the central compartment of the glass case which has been set apart for its display, in a variety of colourings. Unfortunately, wood-engraving would give no adequate representation of the special beauties of this example; an illustration would, therefore, be useless, as its colourings, and the arrangement of its parts for the purposes of weaving, constitute the primary elements of its excellence: and, without believing that it is the very perfection of design and workmanship in ribbon manufacture, we earnestly commend it to the attention of the visitor, as showing how far the energies and talent of our countrymen may be

developed by judiciously-exercised encouragement, and the stimulus of an extraordinary circumstance, such as this Exhibition has proved to many of our manufactures. Let the Coventry men take a lesson from this, and, indeed, the Spitalfields men might do the

7.—TIEN DE CORSAGE.—BY MM. BOUILLETTE, HYOCLINE, AND CO.

same; and let them take care to produce at least one first-rate specimen of their skill every year for the future, as a point of perfection at which their artisans should aim as far as possible, even in their ordinary productions.

SHAWLS.

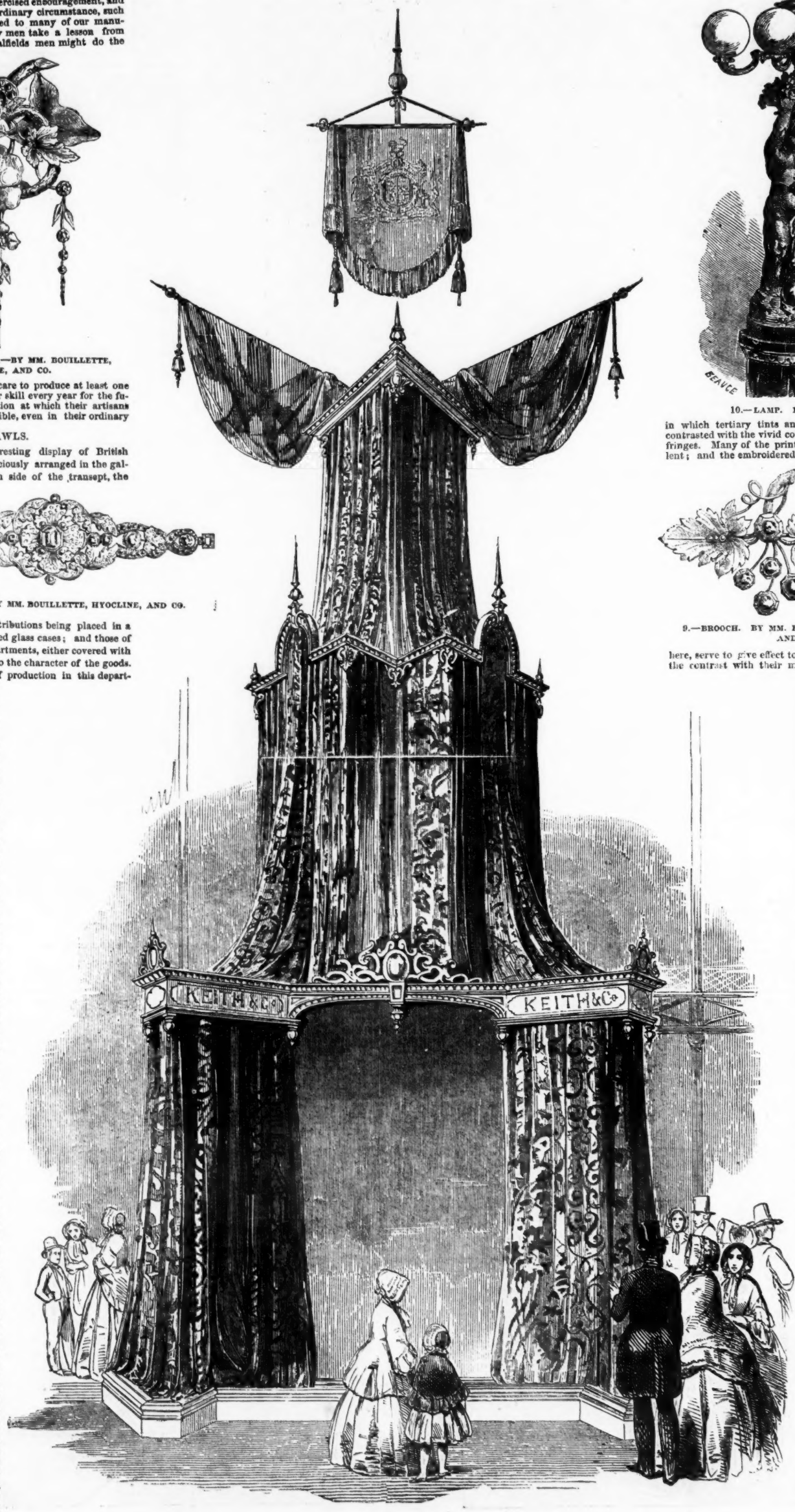
The valuable and interesting display of British shawls has been most judiciously arranged in the gallery on the south-western side of the transept, the

8.—BRACELET.—BY MM. BOUILLETTE, HYOCLINE, AND CO.

London and Norwich contributions being placed in a series of elegantly-designed glass cases; and those of Paisley in suitable compartments, either covered with glass or open, according to the character of the goods. When the great variety of production in this department of textile fabrics alone is taken into consideration, and it is remembered that the design may range from the most intricate India prize patterns to the most primitive of plaids, and yet present decided features of excellence *per se*, the importance of its complete illustration will be at once acknowledged. Nor is this application of the arts of design to be confined exclusively to the production of the patterns by the loom alone, since, of late years most important improvements in the decoration of shawls have been effected by the application of printing by blocks; and the success which has attended this method is fully exemplified by the very beautiful and unique specimens exhibited by Mr. Charles Swaisland, of Crayford, Kent, one of the last of those London printers whose reputation has been eclipsed by the mechanical contrivances and rapid methods of production of their Lancashire rivals. The *barège* shawls of this unrivalled printer have long held the command of the market; and the selection now exhibited will only serve to enhance the reputation acquired by the experience of nearly half a century.

Messrs. Kerr and Scott, of St. Paul's Churchyard, exhibit largely and in great variety, alike in printed and woven fabrics. Messrs. Webber and Hairs, of Milk-street, City; and Messrs. Keith and Shoobridge, of Wood-street, also display an admirable selection, to be noticed and illustrated at a future period. The Norwich exhibitors, too, make a most interesting display in both shawls and figured poplins, brocades, and chinés. The Paisley contributions are very extensive, as may well be supposed, since the great mass of British shawls are manufactured at that place. The India long shawls of Mr. R. Kerr have been held in high esteem for many years past, and the specimens he now exhibits sustain his reputation.

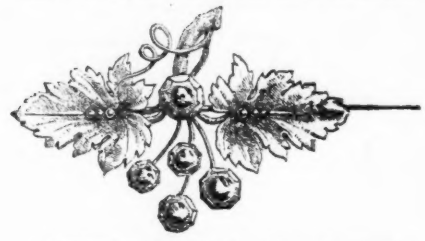
The gay colours of many of the tartan shawls and plaids group well with the more sober hues of the fancy plaids,



11.—SILK TROPHY.—BY MESSRS. KEITH AND CO.—(SEE PRECEDING PAGE.)

10.—LAMP. BY M. SUSSE.

in which tertiary tints and neutrals are admirably contrasted with the vivid colours of broad borders and fringes. Many of the printed shawls are very excellent; and the embroidered ones, though out of place



9.—BROOCH. BY MM. BOUILLETTE, HYOCLINE, AND CO

here, serve to give effect to those around, and gain by the contrast with their more prismatic companions.

We commend this group, then, to our fair readers especially, and it will be well if it does not render them too fastidious in their choice of these special articles of dress to all future time, since, in making purchases, the specimens here displayed will invariably be recurred to as standards by which to judge of the excellence of similar articles.

CLOTHING, HOSIERY, &c.

On the corresponding side of the Transept Gallery, passing under the great elm tree, which rises in all its summer beauty over the head of the visitor, affording a refreshing shade by its branches, and a grateful relief to the eye by its colour, the clothing department of the British portion of the Exhibition is placed, and the contributions here assembled together come from all parts of the United Kingdom. Passing along the front of the gallery, which, as quoted in our introduction, affords so admirable a view of the transept, we pass two organs, one being placed on each side of the great tree. The first, nearest the shawls, is an elegant-looking instrument, the outer case being of tasteful design in the decorated Gothic style, with diapered pipes and other accessories; the other being, in its upper part at least, an abominable-looking box, with moveable "luffer" boards, and the whole of the internal mechanism of the instrument displayed to view. Certainly, John Knox's definition of an organ, as a "kist of whistles," was never more completely illustrated than in this instrument, which, alike for itself and everything around it, is sadly misplaced. The prominent position, seen as it is from the whole transept, ought to have suggested something of a more decorative character; and, as the instrument is intended to illustrate certain improvements of construction, it ought to have been placed more immediately in connexion with the other musical instruments: a double advantage would thus have been gained,

12.—SILK PATTERN.—BY HOULDSWORTH AND CO.

place the motifs of the instrument would have been better displayed, and a valuable space for some decorative object been made available for something more sightly than a huge box. These remarks have been made *en passant*, as affecting the question of the decoration of the Building—a point which, in this instance, has been most unaccountably overlooked.

The clothing department, as the legitimate subject of our present remarks, displays great variety, and has evidently cost much labour in the arrangement. Opposite to the visitor, passing from the shawl department in front of the offending organ, a very interesting display of the manufactures of the Scottish Highlands is placed, forming a very picturesque group, of which we purpose giving an Illustration. The exhibitor, Mr. Macdougal, of Inverness, has brought together, at much trouble and great cost, various specimens of the clan tartans, plaids, and tweeds manufactured at St. Kilda: Highland brooches of bog oak, deer's teeth, and cairngorms; various Highland ornaments of dress, and specimens of rock crystal from Cairngorm Mountain, Inverness-shire. At the back of this Highland display, Messrs. Wigham, of Edinburgh show an elegant selection of fine wool shawls in fancy and clan tartans; and the group is completed by the very *recherche* display of Mr. Buckmaster on the one side, and Mr. Holmes on the other—the former exhibiting several elegant articles of male costume, and the latter a magnificently embroidered mantle; the glass cases in which these articles are displayed being very tasteful in design and elegant in appearance. The hosiery of Leicester and Nottingham, the hats of Manchester, the gloves of Worcester, Limerick, and Yeovil, the straw plaits, &c. of Luton, will all require special attention at some future time. The metropolitan display of varieties too, cannot be done justice to in this rapid glance; but we would particularly urge upon the notice of the visitor the very interesting exposition of straw bonnets, and the illustrations of the process of preparing the straw. Messrs. Cristie's illustration of the processes of the hat manufacture, too, is worthy special attention, as showing the gradual progress of the raw material through its different stages until it arrives at that perfected state when it becomes useful to man for his personal comfort or subservient to his taste as a decorative adjunct.

And here, whilst alluding to processes, and before finishing this glance at our textile display by a review of the lace contributions, it is proper that we should correct an inadvertent omission in our remarks on cotton manufactures in the hurried sketch of last week, and now call attention to the very tasteful display made by Mr. Bazley, of Manchester, one of the Royal Commissioners. Owing to the delay in placing Mr. Bazley's contributions, in consequence of his desire to have a living cotton-plant, *per* the last packet from America, as the first example of his series of illustrations, the fact that he had succeeded in producing a small quantity of cotton yarn of even greater fineness than that to which we called attention as exhibited by Messrs. Thomas Houldsworth and Co., did not come to our knowledge in sufficient time for our last publication, and, therefore, it is essential that justice should be done to this remarkable contribution now. The remarks on fine spinning are quite applicable to this example; but when it is known that, instead of No. 900, Mr. Bazley exhibits No. 1000, or a specimen of cotton yarn spun to the length of 1000 hanks of 840 yards each to the pound, our anxiety to call attention to this fact will be understood; for it will be thus seen, that, whereas Messrs. Houldsworth's contribution counts 450 miles to the pound weight of cotton, Mr. Bazley's counts upwards of 487 miles! The contribution of the latter gentleman illustrates, as a whole, the operations of both the coarse and fine manufacture of cotton arranged parallel to each other, commencing, as already stated, with the growing cotton-plant as the primary stage; and, with the manufactured pieces exhibited by Messrs. Glover and Dunn, places the whole process of cotton manufacture before the visitor, from the finest lace as its highest manifestation, down to the "low quilt," made from mill sweepings and waste.

LACE AND EMBROIDERY

The many very elegant, and, at the same time, miscellaneous contributions under the above head, render it almost an impossibility to group the leading features in such a manner as to render a glance intelligible.

Nottingham, of course, stands forward as the exponent of machine-made lace, whilst Honiton exhibits the pillow-made lace, for which, with Buckinghamshire, it has been so long famous. The sewed muslins of the north of Ireland again make their appearance here, exhibited by the Glasgow manufacturers, in connexion with Scottish examples of the same class. Limerick displays its laces through the well-known firms of Messrs. James Forrest and Sons, of Dublin, and Abbey Court, Limerick; and Messrs. Lambert and Bury, of London and Limerick. Messrs. Forrest's display is a very elegant one, and is admirably arranged in a glass case, of similar construction to that already noticed as so well adapted to the display of the shawls. The Irish Work Society also exhibits the result of its exertions in the promotion of Irish industry; and the Ladies' Industrial Society of Dublin shows to what an extent the hand labour of the Irish poor has of late been made subservient to commercial purposes and the promotion of social progress. Of course, the machine-made laces of Nottingham display themselves in the largest groups; and the trophy, or tent, formed of party-coloured examples, is a marked feature of this exposition when seen from the opposite gallery, for it is in too confined a locality to be properly seen where it is erected.

As might have been anticipated, the "ladies' work" displayed, or attempted to be displayed, in the department of embroidery and tapestry, is almost fearful in its amount—such as crochet and Berlin wool work, artificial flowers, and flouncings. A wilderness of tea-urn mats, antimacassars, needle-work for ottomans, &c., might have been found there, had everything been accepted for which space was claimed. Even as it is, there is more than enough of the examples of industrious idleness with which our ladies manage to cheat Old Time. Still, there is much also to admire; and many a lesson will be learnt by the lady visitors as to methods of production in this kind of work, which, but for this Exhibition, they never might have known.

CARPETS.

Among the glories of the Exhibition must be reckoned its carpets; and the amazing progress made in design as applicable to these articles during the last six or eight years, cannot fail to strike every observant person. The domestic habits of the English are peculiarly favourable to the due developement of this manufacture, and it only required the stimulus of an event like this Exhibition to bring out the latent energies and talent of our carpet manufacturers, and place their trade in its true position. The display now made is highly satisfactory, for there is, certainly, much less of the usual style of carpet decoration. In this respect we had, and still have, much to learn; and the absurd notion of ornamenting our floors with effects in high relief, when the chief requirement of such ornamentation is flatness, appears passing away. A floor, whether covered with a carpet or not, is intended to walk upon; and with a series of artistic pit-falls on the one hand, or stumbling blocks on the other, the *rationale* of decorative art as applied to these articles was completely bidden defiance to. Then came the imitation of the French school, in which ornaments represented in high relief—scrolls panels, and even the skies and landscapes of Louis XV.—formed the stock subjects for ornamenting our floors. Happily we are beginning to see our way back to first principles, and, with the great improvements made of late years in the various methods of producing carpets, there has also been an improved practice in their decoration.

The numerous examples of the various classes of carpets now exhibited are to be found suspended either from the girders above the gallery, or hanging down the side of the gallery from the roof girders above. Messrs. Crossley's display of patent tapestry is made upon the wall of the South Gallery, and is one which, in spite of certain defects in the principles of decoration as applied to such examples of manufacture, does infinite credit to the producers. The specimens shown by Messrs. Henderson and Co., of Durham, the respective Kidderminster manufacturers, Messrs. Templeton, of Glasgow, and the results of Messrs. Bright and Co.'s new patent process by which Brussels carpets are printed with the required pattern after having been woven by power, all go to produce a satisfactory display of our national and industrial skill in this direction. The series of carpets manufactured for her Majesty, and hanging from the roof against the gallery above the West Riding department, are very excellent examples of their class; and we trust in due course to be enabled to do full justice to them, as well as to other individual specimens which cannot be so readily quoted at the present time. The effect produced by hanging the carpets from the girders above the gallery, as already quoted, is very excellent. Each example is seen at a glance, and the amount of colour thus distributed throughout the Building materially aids the effect of the general arrangement.

In addition to the carpets exhibited as specimens of manufacture, there are numerous examples of carpets worked by the co-operation of a number of ladies. The most remarkable of this class is one worked for her Majesty by the Lady Mayoress (1850) and 150 ladies of Great Britain, from a design by Mr. J. W. Papworth, under the superintendence of Mr. W. B. Simpson, West Strand. A portion of this carpet is shown as an example, the original having been used at the inauguration of the Exhibition, and was an object of great interest to the visitors on that occasion.

Of floor-cloths there are some very magnificent examples hung in the neighbourhood of the Carriage Court, where they are displayed to great advantage.

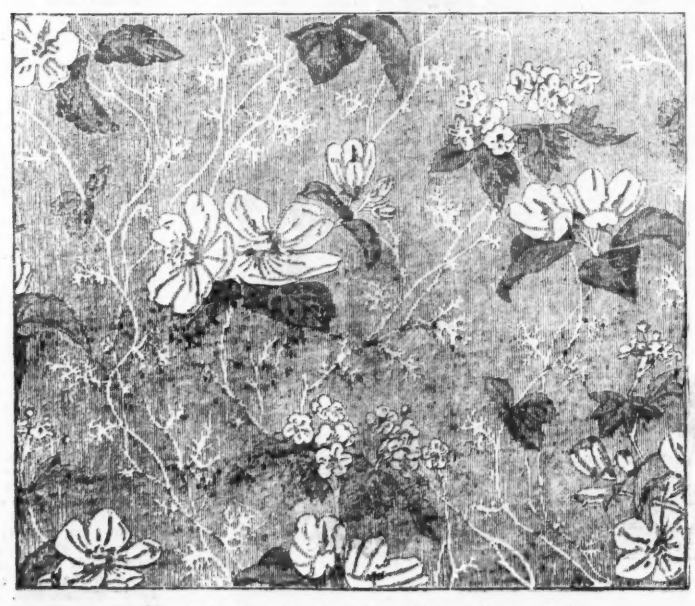
Having thus concluded a rapid sketch of the textile fabrics of the British portion of the Exhibition, and called attention to some of the leading features which characterise the various departments into which they are of necessity divided, we proceed to the

MEDIÆVAL COURT.

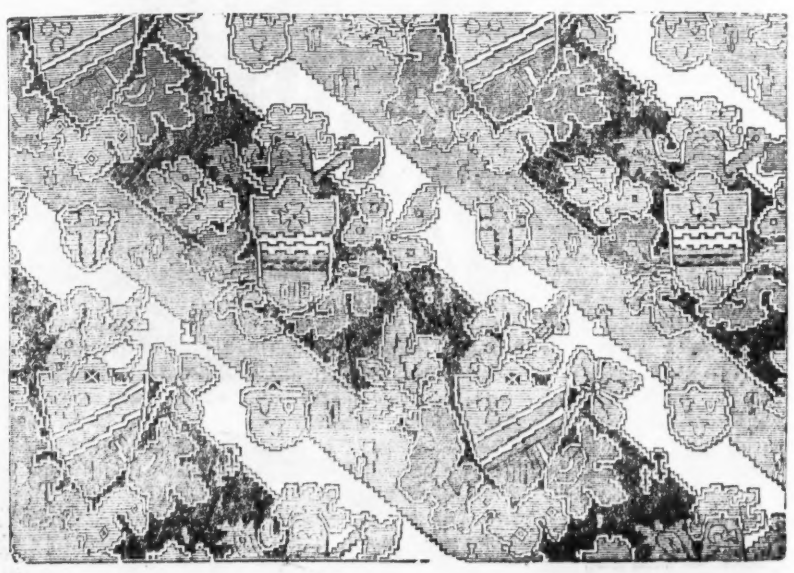
One of the great features of modern art in England has been the revival, during the past ten or twelve years, of those ecclesiastical and domestic decorations which characterised the middle ages, and the earnest enthusiasm and profound knowledge of one man has done more to effect this than all the antiquarian lore of learned societies. In contemplating the remarkable exposition now made in the court or apartment devoted to this mediæval display, every one must acknowledge the influence exercised by Mr. Pugin in producing this result; and though our sympathies are certainly not with him in his ecclesiastical predilections, yet for his energy and his talents every one must have respect; and we may trust that in due time time the love of art, engendered by his exertions, may re-act in another direction, and produce more legitimate results than those arising from either merely copying or exclusively studying the art productions of one age.

13.—BLUE AND GOLD POPLIN.—BY ATKINSON, OF DUBLIN.

In the collection before us we have the results of an union of those manufacturers, or art-workmen, whose attention has been more exclusively devoted to the revivals here illustrated, with the designs and superintendence of Pugin. We have the furniture of Crace, the stained glass and metal work of Messrs. Hardman, the stone and wood carving of Myers, and the encaustic tiles of Minton. It is to be regretted, however, that the apartment or court had not been at least twice the size, as, in that case, everything would have been seen to much greater perfec-



14.—PRINT PATTERN.—BY DALGLEISH, FALCONER, AND CO.



15.—TAPESTRY PATTERN.—BY BRIGHT AND CO.

tion. As it is, there is a sensation of huddling together, which the size and height of many of the examples renders more apparent than real, from the fact that distance cannot be obtained to view them perfectly.

We may divide the contents into two distinct departments—that of ecclesiastical, and domestic furniture and decoration. Entering from the north through a passage leading from the central avenue, the stained glass is seen to some advantage under the shadow of the gallery, and passing through a doorway of a suitable form and proportion, the whole apartment presents a very striking appearance. In the centre stands a font of stone-work, very admirably executed by Mr. George Myers, the panels on the sides being decorated with bas-reliefs, and the whole surmounted with a richly carved canopy of oak; and when the font is in use, the centre, which forms the cover, rises into the upper part. On the left, on the eastern side, the great group of ecclesiastical furniture is placed. In the centre is a stone altar, beautifully carved with bas-reliefs of the Agony, Bearing the Cross, and the Crucifixion; the whole surmounted with hangings of rich and varied texture, and with suitable devices, such as the *fleur de lis*, roses, and the sacred monogram. The sconces, candelabra, and chandeliers, all of wrought metal, are remarkable examples of the truthful adaptation of a given material to a special purpose. The lecterns are particularly noticeable, being bold and effective alike in design as in execution. The smaller one, with the sacred monogram for the tablet, and a small figure of St. John the Evangelist as the surmounting ornament, is at once elegant and novel. A highly decorated rood cross occupies the corner, the carving of which is of a very high character. The monumental brasses, the balustrade of a staircase, the gold and silver vessels for the service of the altar, the vestments for the priests, and the tomb of Dr. Walsh, with its admirable encaustic tile escutcheons, are all so many points of excellence to which we would direct attention, amongst the ecclesiastical examples.

In the domestic specimens there is, if possible, a wider field for the selection of excellence; and where there are so many points challenging attention, it is difficult to select. We would, therefore, urge upon every lover of excellence in art to see these examples, and study them closely; and we trust to be enabled, in due course, to assist in such an examination, by pointing out and illustrating those individual specimens which contain the greatest amount of merit.

CHURCH EMBROIDERY.

In connexion with the Mediæval Court, so far as purpose is concerned, but placed on the opposite side of the central avenue, are Mr. Gilbert J. French's examples of church embroidery, foot-cloths, and carpets. Mr. French's exertions in this direction are now well known and appreciated; and the excellent character of his productions entitles his display to our attention, in connexion with the larger, though not more complete, manifestation above described. A vested altar of rich crimson velvet, embroidered with gold, and a flowing communion-cloth of ruby velvet, also elaborately embroidered, form striking and beautiful objects in the group before us. These are surmounted with embroidered velvet book covers, of appropriate designs; and the whole of these are surrounded by wall hangings of various patterns, and are placed upon carpets with suitable decorations. The richest example is, in all probability, the least likely to be observed. This is a "fair linen cloth" for the altar, which, from the nature of the material, does not display a damask pattern of stars and sacred emblems to that advantage which could be wished. We hope to be enabled to return to these examples, and examine and illustrate them in detail.

HARDWARE.

It would be a hopeless task to attempt to give even a fair glance at the productions exhibited under this head, embracing, as it does, such a variety of examples. It is requisite, however, for the due performance of the work before us, that we should at least indicate certain leading features of the display. The productions of the great and important towns of Birmingham, Sheffield, and Wolverhampton, not to mention the extensive contributions of the Colebrook Dale Company, whose dome, gates, and fountain form an exhibition in themselves, are most conspicuous. The group of miscellaneous examples of iron casting contributed by this house is arranged at the entrance to the Mediæval Court, and consists of ornamental grates, ranges, stoves, and fenders for domestic use; and, in addition to a collection of works of foreign design, groups and statuettes by English artists, Mr. John Bell and Mr. B. W. Hawkins, in bronze, of which, in due course, we hope to give Illustrations and detailed notices.

The Sheffield contributions are of a very high class, and Messrs. Hoole, Robson and Hoole exhibit grates and mantel-pieces, exquisite alike in design and execution. Messrs. Stuart and Smith's collection is also of a very first-rate character; and Messrs. Carr and Steel's examples of grates in bright steel and or molu are especially worthy of notice and examination as beautiful examples of casting and chasing. The court containing the mass of the Sheffield contributions presents an extraordinary exposition of the various branches of the hardware trade pursued in that town—tools of all kinds, saws, cutlery, in short, speaking in commercial phraseology, a complete "pattern card" of the industry of the metal-workers of the north.

Birmingham displays, if possible, a greater variety still, but of a different class of articles. Nearest to the central avenue, and along the passage leading to the Sculpture-room, Messrs. Winfield's display of metallic bedsteads, chandeliers, brackets, and ornamental gas-fittings are placed. Most of these are alike elegant and appropriate in design, the execution being of a very high character. The arrangement of these articles, too, is judicious and effective, but we think the prevalence of red on the walls and floor is somewhat objectionable in contrast with so much brilliant metal. The compound character and the design of some of these examples must be noticed hereafter, and more in detail. Mr. W. Potts exhibits a choice collection of bronzed gas-lamps, girandoles, and chandeliers, the decorative parts of which are worthy of high commendation. Messenger and Sons also keep up the reputation of their house, and, with some exceptional points, present many admirable examples of ornamental casting and metal chasing. Buttons, the multifarious examples of brass-founding in all its various forms as applied to decorative and domestic use, gilt toys, and specimens of jewellery, lock furniture, and ornamental lamps, needles, fish-hooks, candlesticks, and carriage-lamps, with a perfect wilderness of miscellanies, make up the representation of the industry of the toyshop of Europe. Of *papier mache* it would be useless to speak now, as this will require more detailed attention than can be afforded at present; but it is only just to say that the examples displayed, both from Birmingham and Wolverhampton, are of a high class, and such as do full credit to the artistic and executive skill of the producers.

GOLD AND SILVER PLATE.

The rich and varied examples of this class of manufacture are placed in the South Central Gallery, in continuation of tapestry, lace, &c., and immediately over the great group of textile fabrics; and it is only after repeated visits that the spectator can fix his attention upon any example or even group of examples, so manifold are the attractions around. The great group, however, of Messrs. Hunt and Roskell forms an excellent starting point; and in this magnificent display are to be found examples of designs by some of our best artists, wrought out with great skill and effect. Messrs. Garrard, too, keep up the reputation of their firm for taste and excellence in this department; and the elegant displays of G. Angell, Compton-street, Clerkenwell; and J. Angell, Strand; will attract the attention of all admirers of pure taste. The Etruscan adaptations of the former are especially noticeable for their elegance, and the perfect manner in which, whilst the antique forms are preserved, the vessels are adapted to modern purposes. C. F. Hancock, Widdowson and Veale, and J. V. Morel and Co., all exhibit articles of the best kind. The equestrian statue of Queen Elizabeth, by the latter house, is a massive and skilful production, and, as a specimen of embossing, is probably unrivalled in this Exhibition.

The Sheffield houses make a much better display than was anticipated; and, without going into the detail of names at present, it is sufficient to say of them, each displays points of excellence to be quoted in due course.

The weight of supporting the reputation of Birmingham has fallen upon Messrs. Elkington, for Messrs. Collis certainly do not appear in their usual force, although there are many points to admire in their productions. Messrs. Elkington's contributions, however, are very varied in their character, and the wonderful examples of electro-deposit as applied to the production of high art specimens render their display of great interest. The statue of Geoffrey, Earl of Gloucester, modelled by James Westmacott, for the House of Lords, and here produced in metal by the electro-deposit process, is a very interesting work. The bust of the late Sir Robert Peel is not to our taste as a work of art. The vase, representing the triumph of science and the industrial arts, is *apropos* to the Exhibition, and though preponderous in design, is clever in execution. The statues of Watt and Shakspeare are very elegant. On the whole, Messrs. Elkington's display is one of which they have a right to be proud.

In jewellery there is a large and costly exhibition, and one of the interesting features is the revival of antique types for brooches, pins, &c. Messrs. Waterhouse, of Dublin, as also Messrs. West, of the same city, have most successfully adapted the ancient Irish ornaments to the requirements of modern times; and the examples exhibited are worthy of examination, and will claim future attention.

PORCELAIN.

In an admirably-selected position in the north-west gallery of the transept the Porcelain has been arranged, and, as a whole, with good effect; but in many individual instances there is a want of elevation about the stands, which deteriorates somewhat from the effective display of the articles exhibited. Any one who can call to mind the state of our porcelain manufacture some twelve or fifteen years ago, and compare it with the elaborate exposition here made, cannot fail but to be struck with astonishment at the progress made, and that, too, not merely in the high class specimens, but in the commonest articles of earthenware having a pretension to decoration. That great hive of industry, the Staffordshire Potteries, has certainly sent forth on this occasion a full and fair manifestation of its strength; and whether we look at the elegant Parian statuettes of Copeland and Minton, or the substantial but tasteful utilities of Ridgway, we find improvements on past methods characterising the leading features of every department. Could Wedgewood but have seen the results of his talent, his genius, his industry, and his enterprise thus richly rewarded by the manifestation of to-day, and the proof that the trade of which he reared the first healthy plant had grown and flourished until such a large number of his countrymen were sheltered under its branches, his genuine spirit would have been filled with joy and gratitude for the success of his exertions. And here, in the midst, stands the honoured name, "Josiah Wedgewood and Sons, Etruria;" the manufactures exhibited by whom, though excellent in many points, being but a respectable shadow of what such a house ought to have been able to have produced, considering its bygone advantages. The jaspar ware is one of the leading features, and the cameos for which the original house was famous are also shown. The Parian statuettes and groups are tasteful in subject, and in many points excellent in execution; and, on the whole, the examples do not disgrace the name they bear.

The extensive contributions of Copeland, as also of Minton, cannot, by any possibility, be done justice to in this glance, and to select from so great a variety in each instance would only create disappointment; we would, therefore, urge upon the visitor the necessity for carefully examining both contributions, and studying the leading features of each; and in due time we hope to accompany him, and point out those features of excellence which appear to be worthy of a permanent record.

John Ridgway and Co. exhibit largely, and their tea services are of an exceedingly elegant character. Messrs. Rose, of Coalport, also make an extensive display; and with a great lack of taste and judgment in many points, and a sad want of elementary knowledge of art, there are many points of excellence which will require special attention. Mason's ironstone china is noticeable for its colour. Messrs. Chamberlain, of Worcester, seek to keep up the ancient reputation of "the faithful city" and their own house; and certainly, for richness of effect, we have rarely seen a more satisfactory group. The tone of the whole display, so to speak, is full and harmonious, and many of the individual specimens are of high excellence. Grainger's semi-porcelain, a comparatively new invention, has not that brilliancy of effect which the examination of former specimens had led us to expect. There are, however, many advantages to be derived from its use; and the examples now shown are artistic in decoration, without aiming at too much—a rare quality in manufacturing art.

The examples of porcelain displayed by other exhibitors will be treated of in due time; but we earnestly call the attention of our readers to this display of native talent and industry, as one which will amply repay examination.

GLASS.

Had this Exhibition taken place seven years ago, the examples of glass manufacture on the British side would have been so ridiculous as to have provoked contempt. Happily, the removal of that fiscal restriction which paralysed our glass trade for so many generations, preventing, as it did, all improvement, and creating a monopoly where freedom alone could be expected to be successful, has enabled us to make such strides in this important manufacture as to place us in a position to become, at least, equal to our Continental neighbours in the production of ornamental glass, whilst it is confessed that we are already superior to them in the manufacture of the more useful kinds. The Crystal Palace itself is an example of this; and when we examine the display made by Messrs. Pellatt, whose magnificent chandeliers, with their prismatic colourings, form a new era in art, we see no reason to doubt our progress towards perfection in the ornamental branches also.

Messrs. Rice Harris and Son, of Birmingham, exhibit a series of most elegant specimens of cut and pressed glass in a variety of colours, gilt, enamelled, and engraved, as also examples of threaded or Venetian glass. Messrs. Bacchus and Sons, and Messrs. Lloyd and Summerfield, also of Birmingham, present an exposition of their productions, in which are many admirable examples to be noticed hereafter. Messrs. Richardson, of Stourbridge, also make an extensive display of their painted, enamelled, and cut glass, the ornamental being combined with the useful.

The examples of glass for useful purposes are very numerous—rough plate, bent glass, coloured glass for use in stained glass windows, glass shades of unusual dimensions, and whole roofs formed of segments, as illustrative of the increased and increasing use of this material for building purposes. In short, the glass trade of Britain is well and thoroughly represented, and we anticipate that this display will lead to even greater improvements than any yet made in this manufacture.

Quitting the gallery, and proceeding to the transept on our way to the Foreign side of the Building, the trophy of the glass manufacture demands attention.

OSLER'S GLASS FOUNTAIN.

This crowning specimen of the improvements in the glass trade, already quoted, is fitly placed in the centre at the intersection of the nave with the transept. The basin of concrete in which the fountain itself is placed is some 24 feet in diameter, and affords a goodly surface for the falling spray. The structure of glass stands 27 feet high, and is formed of columns of glass raised in tiers, the main tier supporting a basin from which jets of water can be made to project, in addition to the main jet at the top. As the structure rises it tapers upward in good proportion, the whole being firm and compact in appearance, and presenting almost a solidity of aspect unusual with glass structures. A central shaft with a slightly "lipped" orifice finishes the whole, and from this the water issues in a broad well-spread jet, forming in its descent a lily-like flower before separating into a spray, which in the sun-light glitters and sparkles in harmony with the fountain itself. Altogether this is a work of no mean pretensions, and many difficulties of construction have been overcome before the structure presented itself in its present form; and, with the experience derived from the execution of this, there can be little doubt of a greater success in some future effort of the same enterprising manufacturers.

ON THE APPLICATIONS OF ELECTRICITY.

It has been observed, that the first successful application of Electricity to the wants of man will ever distinguish the present reign as an important era in scientific history. From this feeling we desire to lay before our readers, at an early period, an account of the Electrical contrivances and applications of Electricity which are shewn at the World's Fair. First and foremost we must call to mind the very curious and excellent clock, which faces the visitor as he enters Hyde Park, and looks up to the south end of the transept. This clock we described in a former Number, and mentioned that it was the invention of Mr. Shepherd, of Leadenhall-street. Since that period, this same gentleman has added two other clocks, one in the transept, the other at the extreme west end of the Building. Both of these communicate with the main clock by a wire, and thus the time is accurately telegraphed from dial to dial, and all shew the same time. The power is given by an electro-magnet, devised by Shepherd and worked by a form of Smee's battery, which that gentleman has specially devised for the purpose. Mr. Smee recommended the use of mercury into which either pure zinc is placed, or zinc deposited from its solution by galvanic agency. The amalgam is placed in a porous pot, which is suspended at the upper part of a jar. The latter is filled with a mixture of pure sulphuric acid and water; and Mr. Smee considers that this form of battery will prove the most enduring which has yet been devised; and he speaks confidently, that it will probably continue in action for a twelvemonth without any alteration. Mr. Shepherd appears to have brought electric clocks to high perfection; and when the visitor views this interesting invention, he may not only observe the time of day which they indicate, but may also read an indication of the genius of the age in which he lives.

There are other electric clocks besides Sepherd's. Bain has also examples of electrical clocks; and the French have exhibited an electric clock which requires no less than twenty cells of Daniell's battery to work, and hence is vastly inferior to the English clocks.

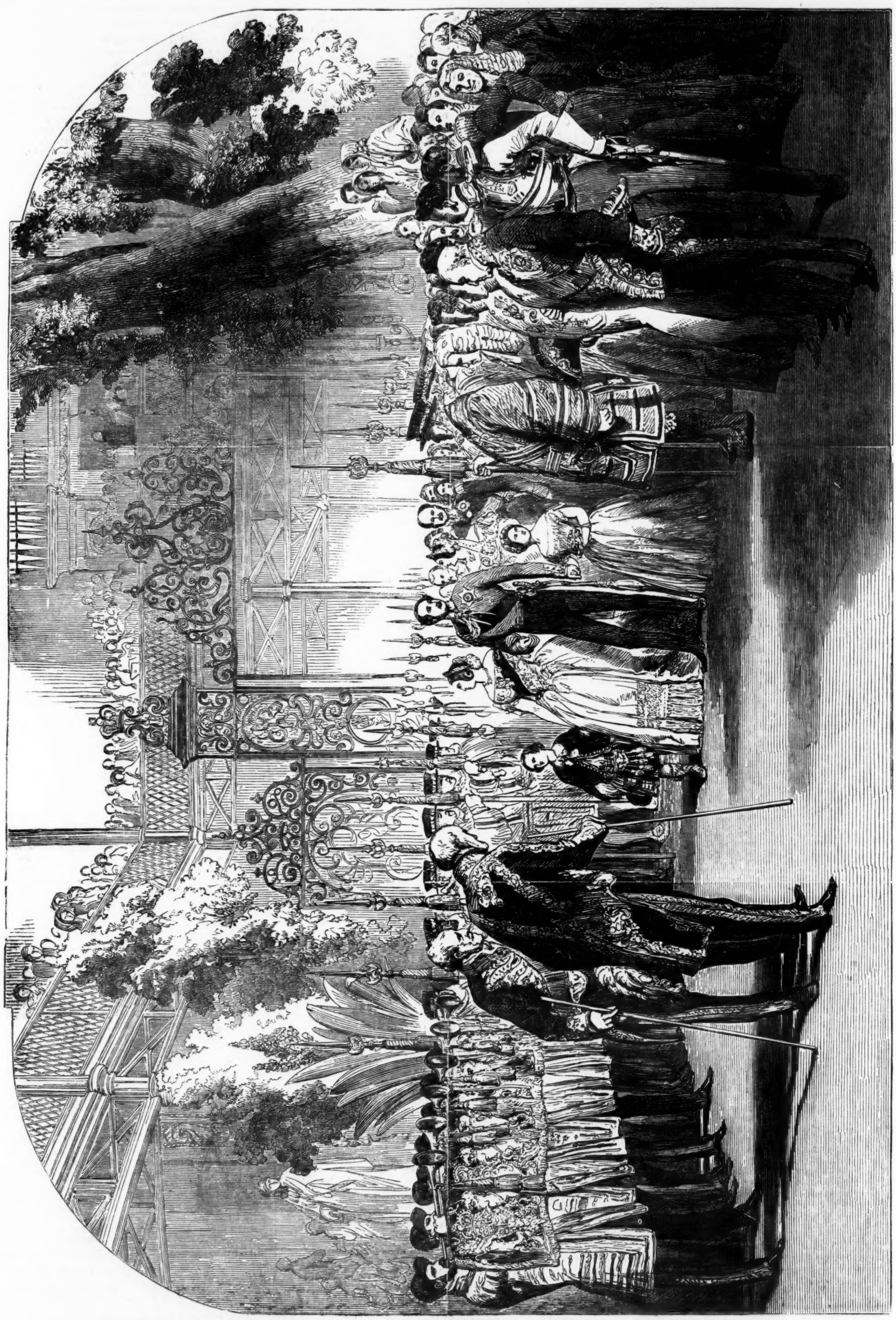
With regard to the sources of electricity exhibited, we have large plate electrical machines, by Messrs. Watkins and Hill, a gutta percha electric machine, also Grove's, Smee's, Daniell's, Sand, percolating, and carbon iron batteries, exhibited by numerous manufacturers. There is also a curious battery invented by T. C. Pulvemacher, in the form of a chain, to be worn round the body, and contact to be broken by the motions whilst walking. There are many curious devices for isolating the voltaic force. Mr. Whishaw has exhibited a plan by which the wires are separated by air, and are fixed in their situation by gutta percha plugs; he has also earthen pipes for a similar purpose. There are other plans, where the wires covered by gutta percha are enclosed by leaden pipes; but perhaps the most interesting of all these devices consists in the heavy iron cases which have been contrived for the purposes of the international communication between France and England, by Messrs. Brett and Little. We have, as measurers of the power, galvanometers; and amongst the Foreign department, a Weber's dynamometer, for ascertaining the amount of electrical force when it has been generated. A syphon trough, by Mr. Wellway, may be occasionally useful; and a battery protector by Mr. Whishaw, to prevent the action of fumes, may be at times usefully employed.

Within the last few years, the discovery of Daniell's battery has led to the carrying out of an idea which has bestowed upon the arts and manufactures a new power of operation in the manufacture of metals, by enabling the artizan to deposit them atom by atom from their chemical solution. The entire range of processes are classed together under the term Electro-metallurgy, and many examples may be seen at the Great Exhibition. One of the most striking specimens of electro deposition is observable in that truly wonderful model of the Britannia Bridge, in which Mr. James has certainly most amply done justice to the merits of the original structure, which will remain as a lasting monument to the genius of Stephenson. This beautiful model adorns the western part of the nave, and it has been made most accurately to scale. Each tube has every rivet represented on its surface, and the tubes have been entirely deposited by galvanic agency. We had the opportunity of seeing this valuable model in process of manufacture. The tubes were made in parts, by depositing the metal upon a type-metal mould. The moulds were placed in a decomposition trough, with a positive pole, and the reduction was effected with a Smee's battery, in the ordinary way. The pieces were then accurately joined together, and the whole electro-plated. The piers are of cast brass, and electro silver plated to resemble stone, which they do so accurately, that a practised electro-metallurgist was deceived in our presence. We recommend our readers carefully to examine this model, which shows, firstly, a perfect tube from one end to the other, resting in its proper situation; secondly, one tube in the process of being raised; and, lastly, one floating on the pontoons, swinging round into its proper situation. This model is not only a beautiful electro-metallurgic specimen, but also gives an accurate idea of the grand national structure which it represents.

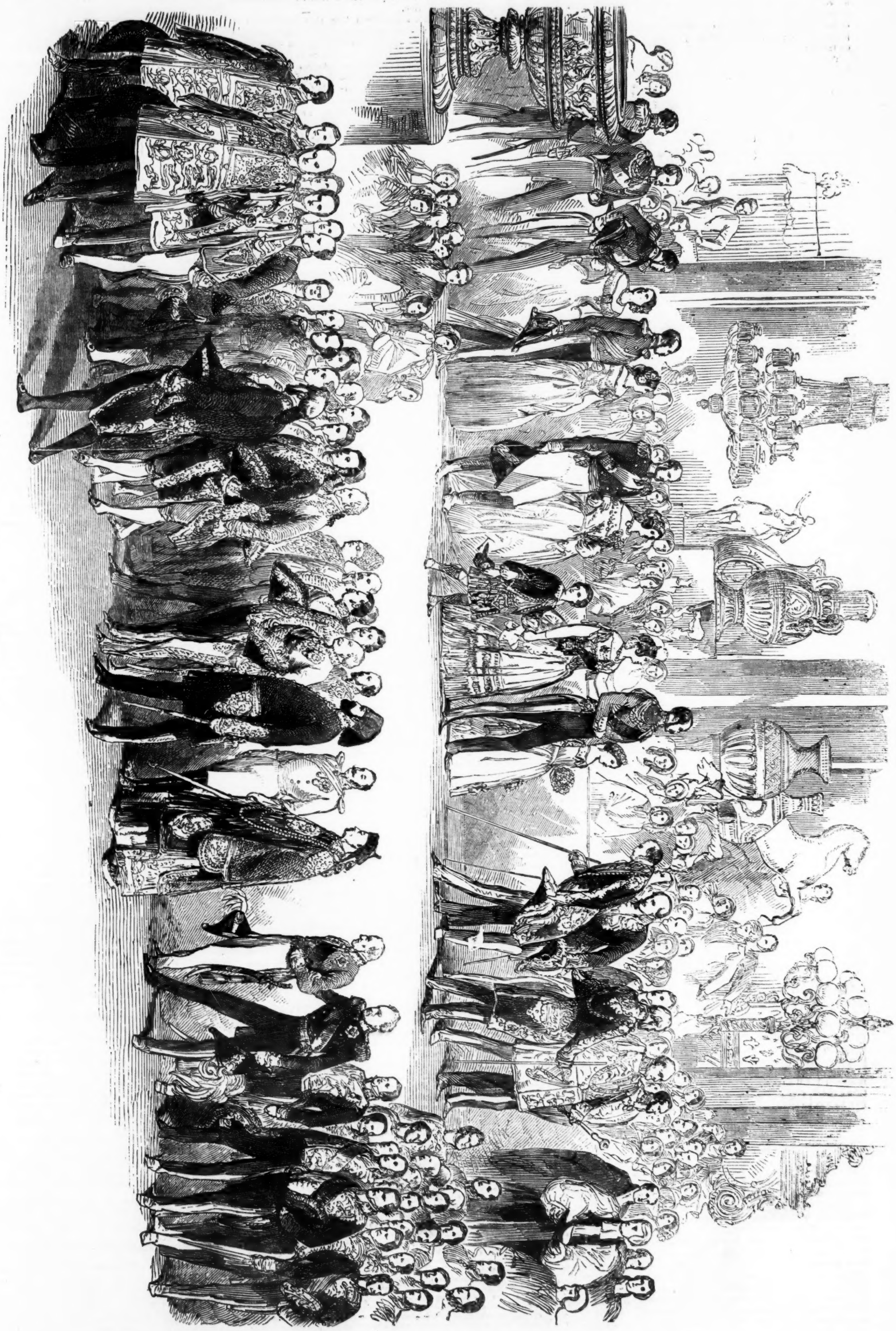
It is an interesting fact, that the first article in the catalogue is a jewel-case, gilt and silvered by the electrotype process, with small electro medallions, modelled from life by Leonard Wyon. We had an opportunity of examining these works of art in the studio of the artist; and no one could fail to recognise the advantage of transferring to metal those free and delicate touches which the artist alone could give to wax. This work was ordered to be executed for the Exhibition by her Majesty, which sufficiently shows the estimate the Queen has formed of the advantages of electricity to the wants of man, by honouring the Exhibition by an example of one of those adaptations which so peculiarly distinguish the present time. For thousands of years medals and coins have been struck from a die; and, until the accession of her present Majesty, it would never have been possible to have made an electro medallion, simply because the process had not been discovered. This specimen has not yet arrived at the Exhibition. In electro bas-reliefs Elkington stands pre-eminent: and he has adapted the most beautiful specimens to enrich sideboards and other furniture. Again, in electro statues he excels; and a very noble example is exhibited in the statue of the Duke of Gloucester, executed for the House of Lords. In electro-plating, Elkington also excels; and he has shown a noble vase, which has been designed expressly for the Exhibition. Connected with electro-silver plating, the visitor must not fail to notice the bright plating invented by Mr. Lyons. He accidentally observed that when a few drops of bisulphuret of carbon were dropped into the silver solution, the silver was deposited as though it were polished. We nearly passed these specimens, from their having been placed in the room devoted to machinery.

Several other countries have exhibited electro-silver plated and electro-gilt works; and, as far as the mere gilding or plating is concerned, they must be considered as fully equal to those of the English, though, as far as the design and splendour of the objects are concerned, the British have unquestionably the pre-eminence.

As far as regards electro-gilding and plating, specimens may be found in all parts of the Building. Amongst surgical instruments and



OPENING OF THE GREAT EXHIBITION.—ENTRANCE OF HER MAJESTY AND HIS ROYAL HIGHNESS PRINCE ALBERT.



OPENING OF THE GREAT EXHIBITION—THE ROYAL PROCESSION.

philosophical apparatus, amongst ornaments of every description, articles gilt and silvered in this manner may be found. Stoves and buttons, hinges and dish covers—in fact, every kind of dissimilar article has received the advantage of the electro plating and gilding processes; so that the application of electricity for these purposes is on the most extensive scale in most European countries.

The ILLUSTRATED LONDON NEWS has occasionally taken advantage of the perfect mode which electro-metallurgy affords of multiplying printing surfaces, and there are not found wanting exhibitors who have profited by this important discovery. The Government are of this class, as in the western extremity of the Building specimens of the Ordnance maps are shown. The plates from which these maps are printed are made of copper; and at Southampton the copper plates are multiplied, altered, or joined together, as occasion may require, by processes carried out by Mr. Geddes, under the superintendence of Captain Yalland. The apparatus at that station is very complete, the troughs being kept in motion by mechanical contrivances, and the power obtained by enormous examples of Smee's batteries. It is much to be regretted, that the copper plates have not themselves been exhibited; but, perhaps, it is not yet too late to remedy the defect.

Messrs. Delarue and Co. have also enriched the Great Exhibition by taking advantage of the power of electricity to multiply printing surfaces. At their interesting stall a novel display of playing cards are exhibited. The backs of these cards are embellished by designs of great excellence; but having produced one surface block, it is multiplied by the ordinary precipitating trough and Smee's battery to an unlimited extent, and thus Messrs. Delarue are enabled to issue cards of a more beautiful description than would be possible by previous methods. It is much to be regretted that these gentlemen, like the superintendents of the Ordnance, have not thought it a matter of sufficient interest to exhibit a few of their electrotypes; but these eminent manufactures have fallen into the common error of supposing that that which is known and daily adopted at their wonderful manufactory is not novel and curious to the rest of the world.

In the exhibition of the articles of gutta percha we have also elaborate designs, which have been formed by electro moulds; but here we observed no moulds, but only the works which have been obtained from them. In the same category fall the embossed copies of coins by Mr. Barclay. He has exhibited many excellent specimens of Greek coins from Col. Leake's collection, which we know to have been embossed from electro moulds; but the moulds have not been exhibited, which we can but view as an important omission, but which, as in the case of the Ordnance specimens, may be remedied.

Electro-metallurgic depositions on retorts and evaporating basins have been exhibited by Mr. Edwards; and this process, which for some time has been much employed, forms a very useful protection to brittle articles.

The catalogue contains a notice of a galvanic arrangement, by Mr Crosse, for purifying water and preserving animal substances; but we could not find it in the Exhibition, from the numbers not being properly placed. We missed, also, what is described in the French division under the name of the "galvanic poultice." The present defective state of the numbers and catalogues renders the task of reviewing extremely laborious.

In the western part of the nave Mr. Gould has exhibited a monumental brass, with copper deposited upon brass in certain positions, to heighten the effect.

Before the Exhibition opened, we had an opportunity of examining a very curious mode of etching hard steel by the disruptive voltaic discharge invented by Dr. Pring. It is a process very little known, but is well worthy the attention of manufacturers, and it is a process adapted for females, as it requires no exertion of physical strength. The process requires an electro-magnet, with six cells of a Smee's battery.

The scientific public are looking forward with great anxiety to ascertain how far magneto-electricity is applicable for manufacturing purposes; and with regard to instruments of this character, Mr. Henley certainly has effected the greatest result. This well-known mechanician has exhibited a very large and powerful magneto electric machine, the armature of which he has formed somewhat in the shape which the magnetic curves would naturally take. He states that as much as 10 CI of mixed gases are given off per minute—a result which gives great importance to this engine. This mechanician has also exhibited a magneto electric telegraph, which we have seen exhibited at the Friday evening meetings at the Royal Institution, and which has given great satisfaction to scientific men. It appears to have great facility in its manipulation; but experience must determine whether the magneto-electric machine is preferable to the battery and needle telegraph, though, as appearances go there is every appearance of its being a successful invention.

Specimens of magnetic plate are expected by Prince and Son, of Birmingham.

Mr. Henley has exhibited also an electro magnet of great power. It is stated that with fifteen of Grove's batteries it possesses such attractive force, that considerable care is required not to approach a bar of iron within two or three inches; and in one instance a man's hand was bruised from being drawn rapidly to the magnet, from his holding in his hand a bar of iron. Whilst we were inspecting the electrical apparatus, we were startled by some terrible shrieks; and on turning round to ascertain the cause, we found that one of the workmen had been decoyed to try the power of one of the machines, and, to the no small delight of the bystanders, screamed with terror when he felt the effect, declaring that no money would have induced him to have tried the experiment if he had known that he would have been racked in that manner. We warn the gentle sex not to venture to try this machine; but if they can coax any sleepy gentleman companion to take a shock, they will be much amused at his lively movements; in fact, he will be served as *Prospero* promised *Caliban*.

> I will rack thee with old cramps,
> Fill all thy bones with aches; make thee roar,
> That beasts shall tremble at thy din

The application of electricity for the conveyance of signals has been very amply represented at the Great Exhibition. In the first place, the telegraph has been carried round the Building, to give information from place to place, and also to Scotland-yard. The apparatus used by the Telegraph Company with the needle instrument, is shown. Many varieties of printing telegraphs are exhibited, including Bakewell's, which is competent to transmit the identical handwriting of the operator. Electric telegraphs, for domestic and hotel purposes, are shewn; and one which is denominated the comic telegraph, is worth a passing glance. The electric indicator, by Mr. Rutter, is a very useful contrivance to give warning of fire or thieves. The battery employed is an ingenious modification of Smee's battery and is charged with Rochelle salts instead of dilute acid, the whole arrangement being so designed as not readily to get out of order. There are other contrivances, to give notice from carriage to carriage by means of galvanic agency; but it would be impossible in a general article to give more than a cursory account of electricity as a medium of telegraphic communication.

Electro magnetic machines have for a long time past been great favourites with medical men, as experience has shown that this form of electricity is particularly applicable for the cure of disease. In this department, Messrs. Horne and Thornthwaite have most excelled, and they have certainly produced a very noble specimen of an electro-magnetic machine. It gives an intermittent current of electricity, but always in the same direction. It is so contrived that the power of the shock may be regulated with the utmost precision, so as to excite at one time the most terrible shocks, at another the most gentle contractions of the muscles. It would contribute much amusement, if the exhibitor would keep it in action, and agitate such of the sturdy muscles of our country friends as would like to try the experiment. The different contrivances which medical men adopt to apply the electricity to various purposes are also manufactured in first-rate excellence, and leave but little to desire upon this score—the only drawback being that the contrivance is already in the hands of the majority of the medical practitioners of this country, and therefore possessed of but little interest to those who seek novelties. There are other forms of medical machines by various exhibitors: some so small as to be called portable machines; others so large as to be really quite pieces of machinery; but, with the exception of Pulvermacher's battery before mentioned, they are all electro-magnetic machines, and we believe that all give a to and fro current, except that exhibited by Messrs. Horne and Thornthwaite.

There is a model of a chair with a Grove's battery behind, intended, it is presumed, to show its application for medical purposes. All physiologists and electricians are aware that a number of cells are preferable for medical purposes; and, if such be its intended application, it must be regarded as a retrograde movement in medical electricity.

Professor Norton has exhibited his galvanic arsenical apparatus for the detection of the mineral.

Connected with the subject of electricity, we cannot refrain from noticing the beautiful models illustrating the anatomy of the torpedo, which have been modelled by order of the Grand Duke of Tuscany, and which are shewn in the Foreign department of the Building. These exquisite representations should be carefully examined by all who are interested in the structure of the electrical fishes.

As a motive power, electricity has not been considered by scientific men to be particularly applicable, on account of its apparently increased cost over steam. The Exhibition is not rich in illustrations of the application of electricity to machinery; but there are two or three models contributed by Mr. Knight and other exhibitors.

For the purposes of lighting, electricity is also considered unfavourable in an economical point of view; but still Mr. Allman, according to the Catalogue, has furnished an electro lamp. Messrs. De Leuill and Co. and Messrs. De Bebosq have also exhibited electro lamps. We searched in vain the building round for the electro-magnetic apparatus which is said to have printed American papers; also for the decomposition apparatus, which is meant to give off hydrogen alone, the description of which had lately occupied so much space in the transatlantic newspapers. We apprehend that such contrivances are not adapted for buildings made of glass, which allow the object to be illuminated at every point, and it will turn out that they can only act in a darkened apartment, where the visitors cannot see all that is taking place.

When we review the applications of electricity at the Great Exhibition, we cannot but be sensible that the specimens exhibited are of a degree of excellence never heretofore exposed to public view. Within ten short years, the whole of these applications have been conceived by the scientific man, and adapted by the manufacturer and mechanic to the wants of man. Whilst, however, extolling this gaudeous display, we can hardly be insensible that scarce any novelty has been added to the World's Fair: in fact, that everything which has been exhibited has been rather a super-excellent specimen of that which has been known, than an example of any new discovery. This statement must be highly suggestive of a moral to the political economist: for, whilst it clearly demonstrates that excellence of mechanical detail and execution can be purchased for money, it also shows that inventive and other results of the higher powers of mind can only be brought forward under favourable circumstances, in a naturally gifted individual, and are not to be purchased at any price. The first practical appliances of electricity will render the reign of Queen Victoria famous in scientific history; and, upon the whole, the Prince Consort must receive the congratulations of the English nation for the beautiful specimens which his Royal Highness' Exhibition has brought forward, and which, by itself, is able to give a stamp to the present age which will be interesting for all time.

As far as the applications of electricity are concerned, England unquestionably bears the palm both in the variety of purposes for which this force has been employed, and also for the excellence of the articles which have been produced; and not only does England in this matter show its pre-eminence over any single country, but it has far surpassed the combined competition of all the other countries of the globe.

CIVIL ENGINEERING AND BUILDING CONTRIVANCES.

THE attractions of the nave and transept at present collect together by far the largest bodies of visitors; and the more utilitarian sections of the Exhibition are, as it were, almost deserted. But the case will be otherwise when the doors are opened to the useful body of the people—that large and important class, who, by their united efforts, have made the Exhibition what it is. So little frequented, indeed, were the galleries on the north side of the *British* nave up to Saturday last, that articles were not only misplaced, but also injured, without the perpetrators being discovered. If anything can show the desirability, nay, absolute necessity, of the exhibitors being at once admitted to the Building to protect their own property, surely, the absence of proper supervision, such as we have mentioned, must convince the Royal Commissioners that a revisal of their unexpected decision as to excluding exhibitors from their own domains is imperatively called for. We have thought it necessary to mention these facts, as there is a large amount of valuable property distributed in the galleries of the British division of the Building.

The direct approach to the class now under consideration is from the staircase north of the British nave, and nearest to the western entrance. There are nearly one hundred and eighty exhibitors in this class, among whom we discover the names of some of the most eminent civil engineers in this country; and many others of equal standing are also here represented by models of their works, exhibited either by companies, or by those who have constructed or become proprietors of the models. But, before cursorily noticing the principal objects of interest in the gallery, our attention was specially called to two models of bridges, which are among the chief ornaments of the western, or British nave.

The first is an accurate and highly wrought representation, by Mr. James, of the longest suspension-bridge in the world, being a mile in length, designed by, and executing under the direction of Charles Vignoles, an English engineer of eminence, and now chiefly resident in Russia. This bridge, which crosses the Dnieper at Kieff, is half a mile in length, and consists of five massive suspension piers and two sets of chains on either side, from which depend the vertical iron bars, to which the strongly under-trussed roadway is attached.

The other model is of the great Britannia Bridge—a work sufficient of itself to immortalize Robert Stephenson, the distinguished engineer. This model was executed by Mr. James, of Broadwall, who, by perseverance and great ingenuity, has contrived to represent every plate, bolt, rivet, and angle iron throughout the gigantic structure. Mr. E. Clark, who superintended the works while in progress for Mr. Stephenson, is the exhibitor.

Near to the above models is one on a larger scale, exhibited by Messrs. Finch and Willy, of Liverpool, who constructed the original extraordinary-looking bridge, designed by Brunel, over the Wye, at Chepstow—which consists of four spaces or openings, three of which measure each 100 feet, while the fourth extends to 300 feet—the roadway of which is suspended, by vertical rods, from a wrought-iron elliptical hollow beam.

Before leaving the nave, we must direct the attention of our readers to the Dioptric Revolving Light apparatus, of Chance Brothers, of Birmingham, who supplied all the glass for the Crystal Palace; and also to Wilkins's Improved Catadioptric apparatus for a similar purpose.

In this cursory notice of some of the principal objects in this important and highly-interesting portion of the Exhibition, it will be impossible to do more than merely allude to them; but all the more important inventions, and models of works, either executed or proposed, will be fully described and illustrated on future occasions.

Returning to the north-western gallery by the staircase already mentioned, our attention is at once arrested by a large and well-executed model of Mr. Danhill's design for a proposed suburban live and dead cattle market, of 60 acres, with *abattoires*, &c. It is to be hoped that this model will call the attention of the million of landowners who will visit the Exhibition, to the all-important subject of removing the many nuisances connected with a cattle market in the midst of the largest city in the universe; and that they will leave no stone unturned to effect the annihilation of the almost numberless slaughter-houses now polluting the atmosphere of the metropolis.

Models of bridges, either executed or proposed, form an important feature in the space allotted to civil engineering and building contrivances.

John and Benjamin Green, of Newcastle, Captain Samuel Brown, Messrs. Hunt and Gandell, Captain Moorsom, and George Rennie, in addition to Charles Vignolles, E. Clark, and Messrs. Finch and Willy, already mentioned, are the principal contributors.

The Greens, of Newcastle, exhibit a large model of one of the laminated wooden arches of the Wellington Viaduct, on the North Shields Railway. The advantages of this mode of bridge building are economy in the first cost, and the rapidity with which arches so contructed may be put up; but then the great difficulty of preserving the timber in such exposed situations, notwithstanding the various nostrums proposed, is a formidable barrier to the general introduction of this light and elegant description of bridge.

The veteran Captain Samuel Brown, the inventor of the Chain Bridge, exhibits, among other things, a model of the Brighton Suspension Pier, one of the first of the kind executed, and which has led to the adoption of this pleasing form of pier and bridge by many of the first engineers of Europe, in cases where the traffic is not of a ponderous character. The fairy-like structure of the great Talford over the Menai Straits aptly serves as an illustration; for so soon as the heavy traffic of the Holyhead Railway was anticipated, a new bridge of great strength was designed and carried into execution by Mr. R. Stephenson, while the lighter traffic of the Holyroad-road is still carried over the original structure.

Messrs. Hunt and Gandall contribute a well-executed model of their design for an architectural bridge to cross the Thames at Westminster. The whole, including the cloisters on either side, is in perfect harmony with the architecture of the Palace of Westminster.

Captain Moorsom was the first engineer in our country to introduce the railway lattice bridge from America: this he first effected on the railway between Birmingham and Gloucester; and he has since erected, over the Norr, in Ireland, a handsome bridge on this plan, a model of which appears in this division. The same gentleman also exhibits a model of his design for the proposed bridge over the Rhine, which gained for him the second prize.

Mr. George Rennie also exhibits a model of his design for the proposed bridge over the Rhine at Cologne, and also models of skew bridges.

There are many other models of the works of the civil engineer in this part of the Exhibition, which will no doubt attract considerable attention when the gay and glittering scenes below shall have satiated the crowd, who especially seek after novelty in its most attractive form. We shall at present merely mention some of the more important articles exhibited in Class 7, which we have not already noticed.

The Commissioners of northern Lighthouses exhibit a great variety of lighthouse apparatus, by Alan Stevenson, of Edinburgh. In the same division, Mr. T. Stevenson, also of Edinburgh, contributes revolving lights and other apparatus connected with this important subject.

The Lords of the Admiralty having given directions that a model of the Plymouth Breakwater should be exhibited at the Crystal Palace, the same has been accordingly deposited. The lighthouse, designed by the eminent engineers, Walker and Burges, is executed in silver, the whole being further illustrated by sectional and other models.

A model of the shield of the Thames Tunnel, the great work of Sir I. K. Brunel, is exhibited by Messrs. T. Dorkin and Co., who constructed this ingenious and extraordinary piece of mechanical contrivance, and assisted the engineer in the invention.

HOROLOGICAL SECTION.

A great portion of the Central South Gallery, and also a part of the western, or "Great Organ Gallery," are appropriated to a grand display of clocks and watches, including chronometers of every description, and from most of the great manufacturers and British horologians of the present day. The most conspicuous objects in this division are—the *Alpha* clock of Mr. Roberts, of Manchester, which stands on the north side of the western gallery. The peculiarities of this clock are—first, the use of cast-iron for all the wheels except that called the "escape wheel," and the substitution of an endless chain for the ordinary rope, so that the drum, and one of the two weights ordinarily used, are dispensed with. Mr. Bennett's four-faced clock, which is placed on the south side of the same gallery, to match the "Alpha." Messrs. Smith and Sons' large turret clock, the works of which are enclosed in a glass case, and which, on a careful inspection, will be found to contain many valuable improvements.

The other most conspicuous objects in this department are Shepperd's electric clock, which has been already recently described in the ILLUSTRATED LONDON NEWS, and the simple and beautiful works of which are enclosed in a glass case in the South Transept Gallery; and, finally, Dent's turret clock, which is very visible in an elevated position in the British portion of the nave. A great novelty in connexion with this clock is the bell, constructed of union metal (cast iron and tin), far more sonorous than the ordinary bell-metal, and of about one-third the price of the former. The weight of this bell is about 18 cwt. The inventor is Mr. Stirling, a gentleman of fortune, living near Stirling, North Britain.

The regulators, chronometers, pendulums, and other improvements in horological apparatus, which are collected together in the Central South Gallery, would alone form a highly interesting exhibition.

Mr. Frodsham exhibits a beautiful astronomical clock, various marine chronometers, day of the month watch, gauges for the admeasurement of watch-work to the thousandth part of an inch, and other important improvements.

Messrs. Smith and Sons exhibit, in addition to the turret clock already mentioned, a 400-day skeleton time-piece and almanack; a new self-compensating pendulum regulator, with compass, perpetual almanack, barometer, and thermometer; and several other ingenious and useful horological contrivances.

Mr. Hutton exhibits, among other articles, his glass and metallic compensation pendulum.

Mr. Elisha's chronometer balance deserves also to be mentioned in this cursory introduction.

Whishaw's centimetral chronometer, with moveable ring, for taking velocities on railways with the greatest accuracy, and for other purposes, and the uniformity of time clock and telegraphic annular code ring of the same gentleman (the former made by Johnstone, and the latter by Messrs. Smith and Sons—all of Clerkenwell, deserve attention.

To enumerate all the other beautiful clocks, chronometers, movements, and other apparatus in the horological department, would occupy more space than can be allowed at present, but the most important of which will be described and illustrated in subsequent Numbers.

CARRIAGES AND LOCOMOTIVE ENGINES.

Man has been variously described as a cooking animal, as a laughing animal, a trading animal, and by no end of other attributes, as the culinary, risible, commercial, or other feelings of the describer predominated; but, as we walked through the compartment of the Crystal Palace devoted to carriages, cabs, locomotive engines, and other means of conveyance, we could not help thinking that he might be quite as appropriately distinguished from the brute creation by the definition of a coach-building animal. Nor was this opinion weakened on our way home through Piccadilly, crowded with cabs, omnibuses, and every description of vehicle, conveying hundreds of passengers, here, there, and everywhere.

From the days of the charioteer Jehu, who, we are told in Scripture, "drove furiously;" from the days of the old Assyrians, Ninevites, and Babylonians, of whom we have the sculptured representations as they appeared in their chariots of war; from the days of the Olympic chariot races; from the days of the ancient Britons, who, Cæsar tells us, garnished their coach-wheels with scythes, down to the present time, when fast men drive about in Hansom cabs; when hard-worked mechanics take a shilling trip by railway into the green fields; and when even the poorest occasionally indulge in a threepenny omnibus to Camden-Town, or other suburban retreats—we have continued evidence of other means of locomotion than the two legs with which nature has endowed us.

Yet, notwithstanding this antiquity of the practice of riding in carriages, coach-building, as we now understand it, is of but comparatively recent date in England, being no farther back than the reign of Elizabeth.

Stow tells us, that, "In the yeere 1564, Guylliam Boonen, a Dutchman, became the Queene's coachmanne, and *was the first* that brought the use of coaches into England; and, after a while, divers great ladies, with as great a jealousie of the Queene's displeasure, made them coaches, and rid up and down the countries, to the great admiration of all beholders; and then, by little and little, they grew usual among the nobilitie and others of sort; and within twenty yeeres became a great trade of coach-making."

Anderson, in his "History of Commerce," makes the use of coaches in England even later than this, and says they were introduced by the Earl of Arundel about the year 1580. For a long time they were exclusively confined to the wealthy classes; and it was not till the year 1625 that coaches were let for hire, when they stood at the principal inns in London. In 1637 there were in London and Westminster only fifty hackney-coaches.

From coaches let for hire, the next step in England was the introduction of stage-coaches, which very soon after 1638 were established. These, the immediate precursors of the omnibus for short distances, and railway for longer ones, bring us down to our own day. Of mail-coaches, the first ran between London and Edinburgh about the year 1785: and the next, from London to Glasgow, in 1788; from which time, spite of the intricate reticulation of railways, which now like a cobweb covers the map of England, with its thousand branches, they have continued down to this day; and in many a country village may still be seen the round red face of the coachman, as he pulls up at the door of the little roadside inn—still may be seen the bustling ostler, as he releases the smoking team from their harness, to give place (as has the system of which they are a type) to fresher, stronger cattle—still may be heard the guard's official note as he winds his horn on starting—vestiges, though they be of an age, which, though all but our own, has been miraculously hurried into the past by the omnipotent power of the steam-engine.

From the sedan-chair and the cumbrous barge of the days of Elizabeth—luxuries that none but the higher classes could indulge in—to the excursion train and the penny boat of our own, how great a change! How great a change, too, from the heavy, lumbering vehicle which Guylliam Boonen constructed for his Royal mistress, to the light, the graceful, and commodious vehicles we see exhibited in the Crystal Palace! There are easy, comfortable Broughams, which speak of competence and easy-going thorough gentility. There are dog-carts, with wheels whose spokes of slender rods of iron look like greyhound's legs—all lightness, though all strength—that speak of reckless, daring speed. Stylish barouches, which suggest the fashionable lounging drive along the Park, rich and aristocratical. There are state carriages, which tell eloquently of Royal *levees* and drawingrooms; and mingled with these—as in this world suffering is ever mingled with enjoyment—are invalid carriages, wherein the sufferer may enjoy the air of heaven, the while all carefully propped up with the softest pillows; and that no stage of mortal man's career may be omitted, Shillibeer exhibits an improved and patent hearse!

Amongst the collection of carriages we were pleased to notice two attempts at an improvement upon the old knee-crowding, dress-crushing, temper-destroying, headache-causing omnibuses we have so long been familiar with in the London streets. They are larger, and are made very high, so as to allow room for a very excellent ventilating apparatus. This is certainly a step in the right direction.

In this department there is one object which especially calls for notice. No 868 is a light open park wheel chair, with glass panels, painted with allegorical representations of the seasons. It is very beautiful and chaste in design. And a barouche (No. 862), the body of which is in the form of a shell, is well worthy of attention.

In the Railway Department there are several inventions exhibited—inventions for safety, and inventions for comfort; for speed, and for strength. There are improved locomotive engines, and improved carriages. Of the former, two mammoth engines stand prominent, the "Lord of the Isles," contributed by the Great Western Company; and the "Liverpool," by the London and North-Western. The "Lord of the Isles" was built for the Great Western Company, at their works at Swindon, and is capable of taking a passenger train of 120 tons at the rate of sixty miles an hour. It is of 743-horse power, and the weight of the engine and tender when in full working order is 52 tons 13 cwt. The cylinder measures 18 inches in diameter, the length of stroke 24 inches, and the maximum pressure of steam 120 lb. The driving-wheel is 8 feet in diameter. This engine, large as it is, is catalogued as "one of the *ordinary class* of engines constructed for this company for passenger traffic since 1847." As if in opposition to this is a beautiful little fairy-like engine, called the "Little England," adapted for light traffic; a pretty little toy, that we could fancy conveying a "ladye faire" to the arms of her lover. Then there are railway carriages made of *papier mache!* and others in which we have an illustration of "beauty unadorned;" being unpainted, and leaving the wood—an exquisite specimen of East India Moulmein teak—uncovered except by a thin coat of varnish. There is a very elegant model of a Royal State railway carriage, with a promenade round the outside; there are new signal apparatus to prevent accidents; modes of communication between the passengers and the guard; improved breaks, buffers, and railway appointments generally, that would well nigh promise that the day of railway accidents had passed away for ever.

Before we quit the subject of carriages, we trust we may be allowed to mention one fact in connexion, not with the Exhibition itself, but with one of the results of the expected passenger traffic in the streets of London. From the 1st of May, the day of the opening of the Crystal Palace, the omnibus proprietors, expecting, no doubt, that nothing could prevent their making their fortunes this year, raised their fares from 3d. to 4d. What has been the result? Spite of the thousands of people we have continually seen at the Exhibition—*the omnibuses are empty!* This is significant; cheapness is the order of the day. People will not stand a return to monopoly; and we would suggest to the proprietors of the vehicles in question, that they should consult the pages of Cocker, who will inform them that twelve passengers at 3d. will pay considerably better than six at 4d.

ON THE ORIGIN OF THE FORCES WHICH HAVE BEEN EMPLOYED IN THE MANUFACTURE OF THE ARTICLES EXHIBITED.

As a prelude to our description of the various mechanical and chemical applications which the Great Exhibition so abundantly contains, it appears desirable that a short notice should be given of the principles which regulate the production of the forces which are employed by mankind in the numerous manufactures. It is the exclusive privilege of the human race to generate these forces; and, although other animals may exercise enormous muscular force, or generate electricity or light within their own frame, man alone can make the candles, the battery, the steam-engine, and employ them to obtain the desired results. In the production of all these forces, one uniform law is observed, which the philosopher and the mechanic must explicitly obey, for every effect must have its antecedent equivalent cause; or, in other words, the most trifling operation is always preceded by some other change which produced it. In this country the steam-engine lends its mighty aid to the arts and manufactures above all other instruments of power; and when the visitor views the mighty hammer of Nasmyth, he should carry his mind back to the boiler from which issues the steam, and from the boiler to the fire, which is the immediate source of the effects which the gigantic hammer produces. All the effects which he will witness through the multifarious machines, however intricate they may be, are referable to that primary change in the fire-place where the coals combine with the oxygen of the air, and the products of that combustion are carried away and diffused through the atmosphere. The results produced by the machine have a proportionate antecedent change in the fire-place; and howsoever intricate and complicated the intervening mechanism may be, the result can never be increased beyond the force which has arisen from the combustion of the coal, or, chemically speaking, by the union of the carbon and oxygen.

Nor can the less known, and apparently more mystic power of electricity, be brought to bear to perform any heavy operation without a corresponding change of matter. When the silversmith plates or gilds his ornaments, we have a result which has arisen from a change of matter in the battery cell. As the silver or gold is deposited atom by atom in the electro-metallurgic trough, the zinc is also wasting in the battery. We thus perceive that the operator has substituted zinc for coals, when he employs voltaic action instead of the engine and boiler. When we examine the clock which moves by electrical force, the telegraph which silently carries the message to distant places, the statues which have been made by electrical agency, or the superb ornamental designs which have been gilt or silvered in a similar manner, the mind is immediately carried back to the change in the battery which is the primary cause of the result which is observed.

In the Exhibition noble castings in bronze and zinc appear. The metal in the hands of the cunning artificer has yielded the cohesion of its particles; and, under the power of the workman's fire, has become so fluid as readily to take a cast of the most minute workmanship which the artist could impress upon the yielding wax or the moulding clay. Here, again, the casting of the objects must be considered with the heat of the furnace, the heat with the change of coke or charcoal into carbonic acid, by means of its attraction, no less than the fire-place requires its accession of fuel, or the lamp its replenishing of oil.

In perambulating the multifarious passages of the Crystal Palace, and even in viewing the noble edifice itself, the student cannot properly isolate from his mind that not one column could have been formed, not one of the most delicate fabrics constructed, without those who have manufactured them having been supplied with adequate nutriment, and without the machines employed having been moved by the effect of a change of matter.

All the triumphs of human skill displayed in this vast Building, together with the very structure itself, have been produced by some change of matter which constituted the source of power. It is within the means of man to generate power in this manner to assist him in carrying on his operations; but he is necessitated to employ a power proportionate to the result which he desires to obtain; for by no method can he in any way increase the amount of power when once obtained, or cause it to produce disproportionate results.

Having thus taken a brief review of the sources of power by which these articles have been produced, we shall be in a condition to examine the particular advantages of all of those which shall have sufficient merit to demand a special examination.

Still the curious investigator will descry the lively Daguerréotype and the charming calotype, and may be tempted to exclaim, "Here is a production made by immaterial agency; here is a result or effect produced without a previous change of matter to constitute its cause." In this case, however, no less than in the preceding, if the light is artificial, the camphine lamp or naphthalised gas is the agent by which a change takes place which is the primary source of the effect by which the picture has been delineated. Doubtless the Exhibition contains specimens of pictures formed by light and engraved by electricity; yet even these noble triumphs of science have only been achieved by acting upon the law, that to produce any change, some other change is required.

The steam-engine and furnace may require their coals, the lamp its oil or naphtha, the battery its zinc, to combine with oxygen to give its power to man, but yet objects will appear where great effects have been produced by the hands of man himself. Cannot the marble group be cut by the sturdy arm of man, and cannot the beautiful lace be prepared by the delicate hands of females? In viewing these beautiful works the mind may for an instant forget the source of power from whence these results have arisen. Nevertheless, modern science has amply indicated, that the delicate finger cannot make one slight movement, or the sturdy arm give one blow without a change of the materials in the human body, which requires food for its renovation.

PICTURE-PRINTING IN COLOURS.

THE present state of this art, which has attained to considerable importance within the last few years, is admirably shown in the various examples contributed to the Fine Arts court.

As long ago as the middle of the fifteenth century we find ornamental initial letters, printed in two or three colours, by the Germans; and several specimens of picture-printing in chiaroscuro are now extant that were executed early in the sixteenth century. These attempts were continued at intervals, and were improved on by an Englishman, John Baptist Jackson, about the year 1740; and afterwards, about 1780, by another Englishman, named Skippe: but these, it must be understood, were mostly imitations of sepia or India-ink drawings, and not, properly speaking, colour printings. In the year 1818, William Savage published a quarto volume, entitled "Practical Hints on Decorative Printing," which contained some bold and clever illustrations of the art of colour-printing; but, as far as regards its adaptation to the representation of pictures, we know of nothing further being done with it, until Mr. Baxter took out a patent for printing in oil colours from wood blocks and steel plates conjointly, and produced the illustrations to the "Cabinet of Painting," published by Chapman and Hall in 1836. Since then, various book-plates, some good and some bad, have been produced by the same process; and, in 1844, Messrs. Collins and Reynolds, pupils of Mr. Baxter, executed some very creditable colour-pictures for the "Old Story-books of England." These were done with wood blocks only. Mr. Baxter's patent expired about a twelvemonth since, when he applied for, and (thanks to Lord Brougham) obtained, a renewal of the privilege, and since then has produced a series of small colour-pictures, which, we understand, have met with a very extensive sale. Many of these pictures are exhibited by Mr. Baxter in one large frame. They are meritorious in their execution, pretty and pleasing, but most of them are inartistic, and some of them are from very bad drawings. The best are a copy of Raffaelle's "Madonna," which has a very finished look, and a new picture of the Great Exhibition Building.

Messrs. Leighton, of Lamb's Conduit-street, are the next exhibitors of wood block colour-printing, and we must say that the imitations of water-colour drawings which they have produced rank much higher as works of art. There are certain crudities and shortcomings which we would fain see corrected; but, with all their blemishes, their copies of drawings by Wehnert, Lee, Absolon, Weir, and Noble, must rank as the best contributions in this branch of the art. Messrs. Leighton do not use an engraved steel plate, as Mr. Baxter does, but gain many gradations of tone by means of mezzotinted metal plates, worked in the same way as the wood blocks. In each of the four pictures in the Exhibition we find traces of about sixteen to eighteen different printings.

Passing to the other side of the court, we find numerous examples of colour-printing by the lithographic press. First, we come to Mr. Owen Jones's exquisitely printed flowers and fruits. These are as near perfection as we ever expect to see in works of this class; both the delicacy of tone and the deep richness of colour of nature are most admirably presented, and far surpass in effect the efforts of ordinary water-colour painting. We should like to see Mr. Owen Jones try an imitation of one of Lance's fruit-pieces, or Mrs. Margett's flowers—not that we doubt his power of rendering them beautifully, but that we wish to see how far the art can be carried.

We next find a frame containing Messrs. Hanhart's productions, and these make us linger long. The copy of Mr. Creswick's "Forest Farm" is excellent—in some parts as good as can be hoped for, especially the sky, the far distance, and the trees; the farm-house is not quite so successful; but we hear that Mr. Coventry, to whose hand-craft this work is attributable, promises a more perfect copy at a second proving of the stones. But Mr. Frederick Tayler's "English Squire," lithographed in colours by John Brandard, is Messrs. Hanhart's pride; and well it may be. We do not hesitate to claim for it the highest praise; and we doubt if there is a work of imitative art in the whole Exhibition showing more artistic skill, and more untiring patience, than is evinced (to those, at least, who know the necessary process) in this remarkable work. The subject is very pretty: an old English Squire and his daughter, their attendants, all on horseback, accompanied by a falconer bearing the hooded hawks, are passing by some peasant children at a gate. The riders and their dresses, the horses and dogs, and especially the little children, are all excellently drawn, and full of beautiful colour. We are sure that nineteen out of every twenty visitors would believe they were looking at an original water-colour drawing, were it not for the announcement beneath it, and the unfinished copies, showing some of its various stages, that are displayed in the same frame. If the reproduction of a good drawing be a good service, Messrs. Hanhart and Mr. Brandard deserve the thanks of every lover of art.

Messrs. Hullmandel and Walton next show excellent specimens of their lithotint drawings; and then we come to Mr. Day's splendid contribution, "The Destruction of Jerusalem," by David Roberts, lithographed by Louis Haghe. This is a very extraordinary production—the largest picture, we believe, ever drawn on stone, and certainly a most successful one. It is hardly an example of colour-printing, for there are but two or three tint-stones used; and it is more for its grandeur as a work of art than for any application of a new art that we admire it. The published drawings of Roberts's "Holy Land," lithographed by the same artist, are too well known to need more than a passing word of commendation.

Of Mr. Kronheim's elaborate copy of "The Descent from the Cross," on which it is said some large sums of money have been expended, we cannot speak with praise. It may be mechanically—it certainly is not artistically—good. With most of the minor specimens of this interesting art that are exhibited, we are all sufficiently conversant.

SCULPTURE.

(SECOND NOTICE.)

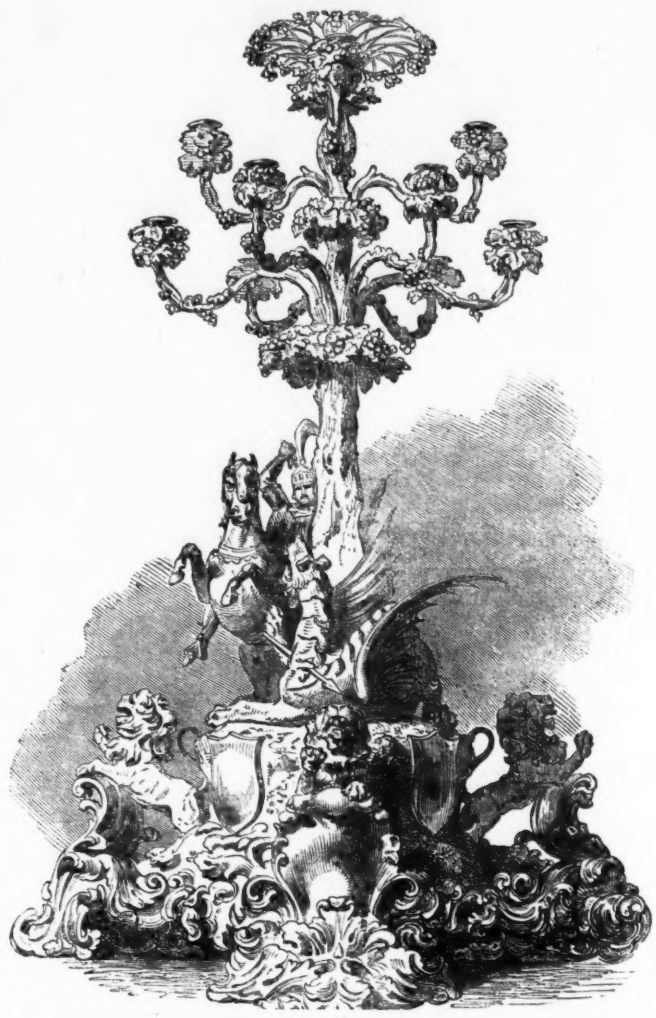
IN proceeding to resume our observations upon the productions in Sculpture, brought into honourable competition in the Great Exposition of the Arts and Industry of all Nations, a sense of the importance of the occasion induces us to consider the subject upon a broader basis, and with more reference to fundamental principles than is thought convenient or agreeable in ordinary newspaper criticism. We cannot but recollect that this is no common exhibition-room, where producers expose their wares in the way of trade, to ensnare customers and procure bread, but a field of generous rivalry, to which artists from all quarters of the world have been invited, with a view, by a comparison of their various productions, to increase the common stock of knowledge as regards the legitimate resources of the art, and to award premiums to the most meritorious performances. All who have answered to this invitation have, by so doing, challenged criticism, not only as to individual merit, but as to comparative excellence, and have a right to demand it. The public, also, who have so cheerfully and substantially supported this great cosmopolitan *réunion*, and who look to derive instruction from the field which it opens, would equally have good ground to complain of a dereliction of duty in those who pretend to write for their guidance and information, if, from motives of false delicacy, or upon other grounds less excusable, the journalist were to shirk the task of criticism, or weakly and injudiciously perform it.

It may be gathered from the few general observations which closed our last week's brief notices in this department, that the result of the very casual survey we had been able to make of the works in sculpture sent for exhibition in the Crystal Palace had by no means elevated our previously entertained notions of the *status* of the plastic art in this country, much less prompted a favourable comparison with other nations in the same school. Subsequent and careful inspection has only confirmed us in this unsatisfactory conclusion; and has, moreover, led to the conviction that the cause of our failure is more deeply seated than is generally imagined by artists and their admirers.

Want of patronage is the common cry with artists, as with actors and men of all professions who happen to fail of success commensurate with their own estimate of their merits. Like Danaë, the coy genius of sculpture is only to be won by a shower of gold; forgetful that the shower of gold did not make Danaë what she was when she attracted the discriminating gaze of the Thunderer. Let our patronage-hunters in the plastic art bear that in mind of the frail Danaë, and let them also consider whether the allegory might not with truth be carried a little further, and the inducement of gold lead to the ruin of art, as it did of Danaë. But, indeed, as to the complaint of want of money-patronage, we consider it peculiarly uncalled for as regards sculpture, which, having reference to the number of hands employed in it, is more lavishly rewarded than any other branch of art, to say nothing of the miserable crumbs which fall to the share of many more intellectual pursuits. St. Paul's and Westminster Abbey, in both of which whole mines of wealth have been distributed amongst the hewers of stone and the moulders of clay, are witnesses to what we assert. The squares, too, each with its costly bronze or marble occupant. The Nelson Monument was no mean job after its kind—whilst the Triumphal Arch comes like the rod of Aaron to swallow up all the jobs of the preceding half century. In short, is there a site of ground throughout the country where a testimony to departed worth can possibly be put up, which will not one of these days be so occupied? Is there a single issue of the *Times* without a testimonial subscription list? The ancient Greeks, it is true, had their testimonial-mania likewise; but their tributes were to gods, and heroes almost deified; and the men employed in producing these still unequalled works, brought to bear all the resources of their art in typifying, rather than embodying the principal subject in the most perfect and appropriate forms a deep study of the human figure could suggest, with only such an amount of accessorial decoration as might be absolutely necessary to indicate the character and state of the personage represented. We, having no plurality of gods to worship, no old historic heroes to engross our wonder and exhaust the resources of our art, too generally content ourselves with mere imitations of

16.—CENTRE-PIECE.—BY SMITH AND NICHOLSON.

17.—CANDELABRUM.—BY M. ANDRE.



18.—CENTRE-PIECE.—BY SHARP.

gross humanity, individualising nature in her thousand imperfect manifestations, and completing each new portraiture with the addition of details which high art would disdain to notice. Upon this point we find some appropriate observations, so judiciously and so ably stated by Sir C. L. Eastlake, P.R.A., in a paper inserted in the appendix to the third Report of the Commissioners on the Fine Arts (1844), that we readily quote them, in preference to enlarging upon the subject in weaker language of our own:—

"The *colour* of white marble, which, it appears, may sometimes increase the illusion of drapery, is not the only quality by means of which some substances may resemble nature more literally than the marble flesh can. The qualities of smoothness, of hardness, of polish, of sharpness, of rigidity, may be perfectly rendered by marble It not easy to conceive a greater accumulation of difficulties for a sculptor aiming at the specific style of his art to contend with, than the representation of a personage in the modern military dress. The smoothness and whiteness of leather belts, and other portions of the dress, may be imitated to illusion in white and smooth marble. The polish, the hardness, and sharpness of metal, and the rigidity even of some softer materials, are all qualities easily to be attained in stone; yet the white marble flesh is required to be nearest to nature, though surrounded by rival substances that, in many cases, may become absolute fac-similes of their originals. The consequence of the direct and unrestrained imitation of the details in question is, that the flesh, however finished, looks petrified and colourless, for objects of very inferior importance, even to the buttons, are much nearer to nature. The objection to these details, from their unpleasant or unmeaning forms, is here left out of the account.

"The boldness with which the ancient sculptors overcame similar difficulties is remarkable. Thus, to take an extreme case, *rocks*, which in marble can be easily made identical with nature (thereby betraying the incompleteness of the art in other respects), are generally conventional in fine sculpture; witness the basso-relievo of Perseus and Andromeda, and various examples in statues where rocks are introduced for the support of the figure. In order to reduce literal reality to the conditions of art, the substance, in this instance, is, so to speak, uncharacterised: the same liberty is observable in sculptured armour as treated by the ancients; sharpness is avoided, and the polish does not surpass, sometimes does not equal, that of the flesh. In like manner, steps, or any portions of architecture, are irregular, and not geometrically true in their lines and angles: on a similar principle, probably, the inscriptions on the finest antique medals are rudely formed; for it cannot be supposed that the artists who could treat the figures and heads so exquisitely, could have been at a loss to execute mechanical details with precision."

Now mark the contrast between the past and the present. Whilst the ancient sculptors were so engrossed with the diviner part of their work, the living figure, that they studiously avoided the too accurate delineation of subordinate objects, whether of decoration or adjunct, lest by comparison these should detract from the *vraisemblance* of the former, modern sculptors, beginning too often with the most humble attempts at portraiture, and other branches of imitative art, are content to atone for the lamentable short-fallings of the living part of their subject by slavish copying of a button-hole, or a leather strap, or worsted hose. And have they not their admirers? Undoubtedly they have, and the name of them is legion—a public who will stare and wonder at the workmanlike finish of a helmet or a jack-boot, but have no appreciation of the sublime inspiration evinced in the various speaking and all but breathing relics of the antique.

It would appear, therefore, that, as between artists and the public, there are faults on both sides, which, when they both begin to understand what is worthy of them, may gradually be removed. With these general observations, which we may follow up from time to time in the course of these notices, we now proceed to remark upon some of the works in the Sculpture Gallery of the Hyde Park Exposition.

19.—GROUP OF BRONZES.—BY VITTORY.

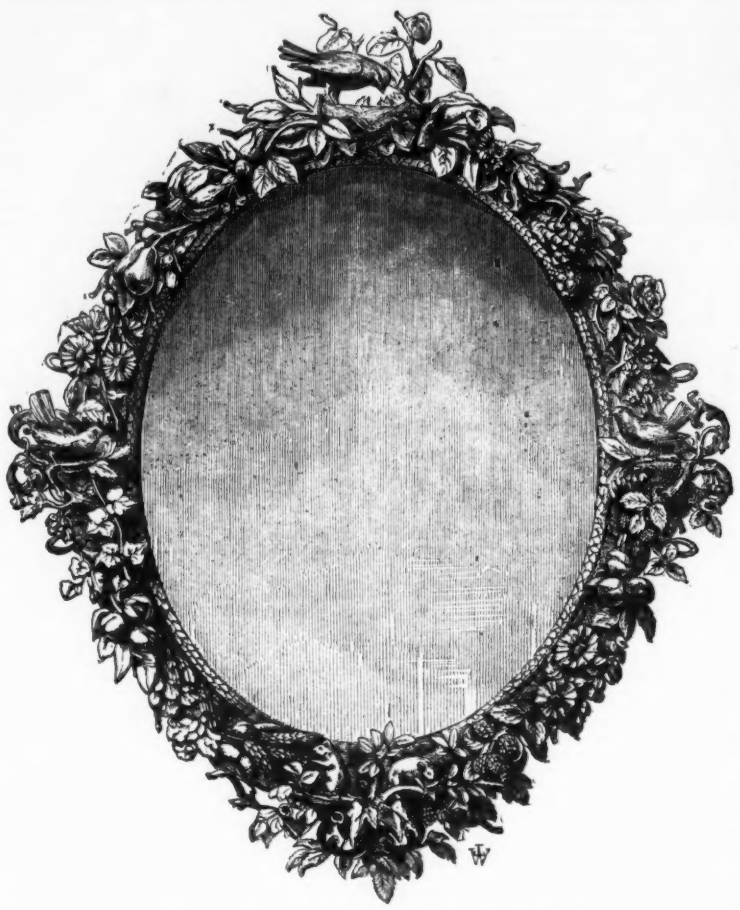
The Sculpture Room is a small, ill-lighted, and overcrowded apartment, which, being entered through the gaudy Mediæval Court, points significantly to the retrograde path of art. The first object that strikes us in the centre, at the extreme end, is a statue in marble of her Majesty, by Francis, which unhappily illustrates many of the errors of prejudices and of taste we have suggested in the preceding paragraphs. The head is as singularly devoid of dignity as the figure is of grace, being indeed completely buried in the cumbersome trappings of Royalty; the artist having made no effort to contend with the natural heaviness of his material, by indicating through it the bearing of the limbs. On either side of this figure are two other productions by different artists, which afford examples, though not in equal degree of turpitude, of the diversion of the sculptor's art to subjects altogether unworthy of and inappropriate to it. One of these, which is by Mr. T. E. Jones, presents a very rough, but not very truthful, portrait of a Shetland pony, upon whose back two children are seated, whilst a third, scrambling on the ground, offers to feed it; a full-grown Scotch deerhound completes the already redundant group, which is obviously borrowed from Landseer, and spoiled. The other subject referred to is Mr. Bell's "Una, or Purity." The female figure, which is of a common-place character, is seated upon a shaggy lion, which has evidently been the chief object of the artist's solicitude. In order to distract attention still further from what ought to be the principal subject, Mr. Bell has decorated the king of the forest with a wreath of flowers, elaborately finished, and in remarkably high relief, the coronals picked out with yellow, which not only covers the neck and mane, but extends behind the female figure round to the animal's stern, whilst a single rose disengaged from the rest occupies a prominent position in the foreground of the base. Could the force of ingenuity go further to destroy the "purity" of a composition? In another part of the room, Mr. Bell's "Babes in the Wood" exhibits a similar instance of mischievous ingenuity: heaps of leaves, and a branch of a tree, upon which is perched a bird, being prominent above the principal

objects, and breaking the graceful outline which in works of sculpture is a condition essential to beauty.

Still more glaring instances of ignorance of the higher purposes and legitimate resources of the sculptor's art are to be found in Sharp's plaster group, "Christ's Charge to Peter," where the sheep and a bunch of keys are the actualities of the piece, the figures exhibiting a lamentable ignorance of the structure of the human body; and in "Christ bearing his Cross," where the sculptor has introduced an absolute wooden cross, some seven or eight feet long, which could not have been carried in the way he has placed it in the arms of his figure. We notice these productions, not for any pleasure of fault-finding, but for the purpose of emphatically pointing out to the thousands who will visit this room, and who may read these lines, what to avoid.

20.—TRITON FIGURE FOR A FOUNTAIN.—BY M. ANDRE.

Against the walls are two large bas-reliefs by Mr. Carew, which exhibit considerable merit of intention, though with much of ine quality and weakness, and, perhaps, we might add, carelessness in the execution. The first in importance is "The Descent from the Cross," of which it is remarked, that, although it covers a very large space, the interest of the scene is confined to a very limited portion ot the base. The upper part is occupied by the cross, and an indication of rays of light, which, perhaps, the artist designed to turn to effective account on the execution of the work in bronze or marble, but which, it must be obvious, only colour or gilding could realise. Mr. Carew has



22.—FRAME FOR A LOOKING-GLASS.—BY HANSON.

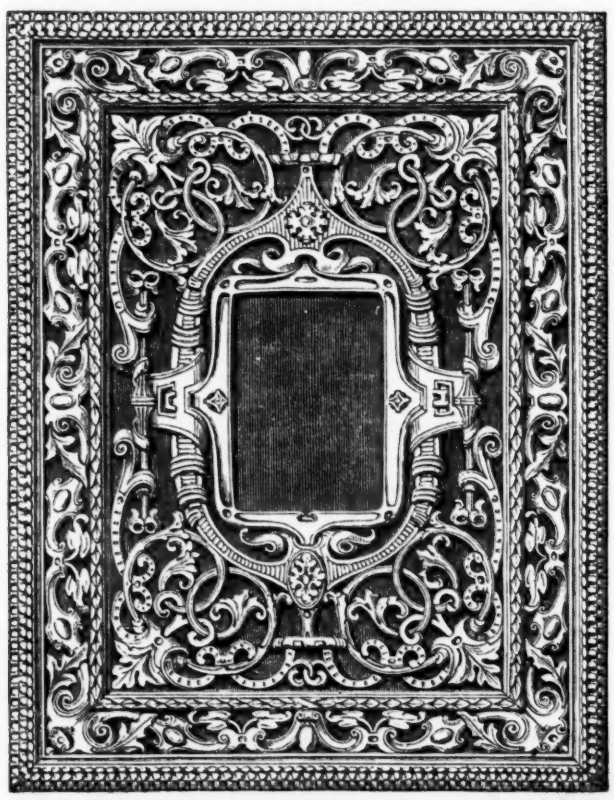
shown less anxiety to find subject-matter to fill his ground than Rubens, in his great work on the same subject, though the latter had all the resources of his florid pencil to fly to, and could have occupied the whole of the upper part of his canvass with aërial effects, had he been so minded. In the principal group of Mr. Carew's work, the head of Christ stands out with remarkable effect, the light falling upon it so as to give it all the palor of death. The heads of the Apostles are of less merit, and disappoint us by the utter want of sympathy and veneration which they betray for the precious burthen in their hands. They are all looking off the picture, in a downward direction, as if calculating the steps by which they are to descend with safety. The female figures, also, which are a good deal scattered, appear to be each so overwhelmed with her own particular grief, that they none of them show any solicitude about the divine object which has brought them together, and no sympathy for one another. The boy on the right is an intruder. The consequence is a want of *ensemble*, to say nothing of a want of truthfulness to nature, which must considerably militate against the success of the piece. Mr. Carew has very abundantly draped his figures, but he has done it in that broad massive style, which is sometimes very effective in painting, but which, is always heavy in sculpture, and suggests the suspicion that it has been resorted to to avoid the trouble of going into anatomical details. The "Baptism of Christ," Mr. Carew's other bas-relief, is less elaborate and ambitious than the preceding work, consisting, as it does, of two figures only. Still, in these two, we perceive a want of judgment—the build of the limbs being brawny, not to say heavy, a character, quite out of keeping with the personages represented, while there is little attempt at dignity to realise the sublime poetry of the scene. Mr. Carew is more at home in his smaller work, a plaster figure of "Whittington." The face is very expressive, as in the act of listening to the distant sound of Bow bells. In the costume, however, there is the same shirking of difficulties, the whole figure being buried in coat and trousers of the thickness and unyielding texture of leather.

Mr. Evan Thomas's bas-relief, "The Spirit of Science unveiling Ignorance and Prejudice," has many pleasing and creditable features; as, for instance, the dazzled and awe-struck expression of "Ignorance," at the moment of being unveiled before the light of truth, and the sitting figure of "Prejudice," wrapped in a thick and impene-

21.—VASE.—BY M. ANDRE.

trable cloak beneath. The rest is rather commonplace, particularly the figures of the two youths receiving instruction, on the other side of the picture, and who do not sufficiently balance the composition.

Conspicuously in the midst of the room is a table, covered with the models for statuettes sent in to compete for, the prizes of £100 and £50 munificently offered by the Art Union of London for such objects. We would by no means disparage the kindly intentions of this body in affording encouragement to the development of our native genius, however small the modicum of reward, provided the field of competition selected be such as



23.—BOOK-COVER, IN CARTON PIERRE.—BY JACKSON AND SONS, RATHBONE-PLACE.

24.—BLOTTING BOOK-COVER.—BY C. YE

25.—GROUP OF BRONZES, &C., BY MENE.

eally to afford opportunities for improvement, and to encourage industry in a legitimate way. But when the committee of the Art Union fancy that by the offer of £100 they will induce twenty or thirty competent men to set themselves to work devising and perfecting an original subject for a statuette which shall be of any merit as a work of art, or be worth even the expense of casting as a table ornament when completed, they labour under a very great delusion, a delusion which the present display made in answer to their call ought for ever to dispel. These gentlemen appear to have begun at the wrong end, and to expect to find, by the dozen, artists imbued with genius, and with practised hands, ready to answer to their call; whereas, the utmost they should have sought to promote by their limited munificence were the executive abilities of students in the art. This might perhaps best have been done by selecting some one or two of the well-known gems of the antique, in the Museum or elsewhere, as models to be imitated in statuette size; and with a view not to confine the candidates too slavishly to the task of merely copying, we would not altogether have prohibited a latitude in adaptation, modification, or additions suitable to the purpose. We merely throw out the suggestion, as affording, possibly, the means of release from the dilemma to which all schemes for competitions in works of art are necessarily more or less subject, and opening a ligitimate school for study and improvement to our future Bacons and Flaxmans.

We cannot quit the Sculpture-room, without recording our meed of praise of the "Greek Hunter," by John Gibson, which is exhibited by its owner, Lord Yarborough. Here is no crude imitation of nature, which artists often copy without understanding what nature is, or should be; here is evinced a mature study, a ripe appreciation of the best classic models, after all, in the present state of art, the best and surest types of excellence. In *physique*, the model is well chosen or the subject, nervous, wiry, and athletic. The muscular development is carefully studied, and without exaggeration: the intent and animated expression of the face is true to the occasion; and the general finish of the flesh texture—mark alone that above the instep of the right foot—approaches perfection. We need not despair of excellence in the higher walks of art, when such works as this come from British hands.

We shall return to many creditable productions in this room in the course of our critical survey, but we must close our remarks for the present.

THE HISTORY OF INDUSTRIAL EXHIBITIONS.

BY WILLIAM BLANCHARD JERROLD.

(*Continued from page* 373.)

CHAPTER II.—(*Continued.*)

THE second official exposition of French industry, like the first, was dedicated to the anniversary of the Republic.* France was still at war; but the treaty of Luneville had already been signed, and the preliminary articles which had been negotiated between France and England were to be signed in London only a few days after the proposed opening of the second exposition. Encouraged by the pacific aspect of affairs, the manufacturers made prodigious efforts, and the result surpassed the most sanguine hopes of the Government. The Louvre was the scene of this second national exhibition. Two hundred and twenty exhibitors were admitted to the competition—about double the number of those who had figured in the first exposition. The Government, recurring to the first exposition, had decided that the same number of prizes which had been distributed on the former occasion would suffice for the second; but the rapid advances which the manufacturers had made within the short space of three years, proved at once the insufficiency of the rewards; and it became necessary, in order to meet the progress which had been made, to set aside the seven manufacturers who had obtained gold medals at the first exposition, and eight of those who had already obtained silver medals. From this necessity arose the custom adopted in subsequent expositions, of voting only the confirmation of previous rewards in favour of those who maintained honourably their acquired position. At this exposition ten gold, twenty silver, and thirty bronze medals were awarded.

In the year VI. no manufacturer of woollen goods was classed among the prizeholders of the first order. In the year IX. Decretot re-appeared with goods as delicate and beautiful as those which he had brought to perfection at Louviers, before the Revolution. In the year VI. Ternaux Brothers had hardly gathered together the ruins of their fortune and manufactures; in the year IX. they had raised the products of Sedan, Rheims, and Verviers once more to their original perfection, and their workshops resounded with the clatter of five thousand artizans.

Before the Revolution, French manufacturers depended upon foreign wool for their finer fabrics; but the exertions of Chaptal (who has been called the Colbert of the nineteenth century) changed the face of affairs in this respect, for we find that in this second official exposition a space was set apart for the display of French woollen fabrics manufactured from the fleeces of the Spanish breed of sheep naturalised in France. Thus, within a few years, the French saw the cultivators of their own raw material challenging comparison with those of the Peninsula. The Jury, in the name of France, acknowledged the debt of gratitude due to MM. Gilbert, Tessier, and Huzard, three members of the Institute, "for the zeal and perseverance with which they have watched over and improved native wool." (*Report, year IX.*)

In the year VI. the highest degree of fineness to which native manufacturers spun cotton was No. 110, and this number obtained a prize in the exposition of that year; the exposition of the year IX. contained cotton spun to the degree No. 250.

The Baron Charles Dupin declares that in the year VI. the cotton fabrics of England without doubt surpassed those of France; and he refers to the products exhibited at the second national exposition, consisting of velvets, nankeens, stockings, &c., to show how rapidly his country had advanced, towards that degree of excellence which he allows English goods to possess indubitably.

The manufacture of leather had also made extraordinary advances within the same short period. At the time of the first exposition, only the most common leathers were dressed in France: in the second exposition were found morocco from Choisy le Roy, that might have challenged comparison with those of Turkey. The carpets of Sallandrouze, the china of Sèvres, the earthenware of Sarreguenines, and the beautiful printing of Didot, Herhan, and Piranesi, were especially commended by the jury.

Names which will be known as long as an enlightened patriotism and commanding talents receive the homage of men, were included among those of the members of the central jury on this occasion. We should mention Berthollet, Berthoud, Guyton de Morveau, De Prouy, Vincent the painter, and M. Costaz, the framer of the report. At this exposition the renowned Jacquard obtained only the bronze medal for his important improvement in Vaucauson's loom. M. Burat, commenting upon the insufficiency of the prize awarded for so important an invention, warns us not to blame the jury for holding Jacquard's improvement in a comparatively trivial light, inasmuch as the manufacturers and weavers themselves hardly deigned to bestow a moment's notice upon it.

The history of the Jacquard loom has its moral. "Until its introduction," Mr. Bischof writes in his history, "the production of the superior figured silks depended solely on the skill of the weaver, and that to a degree which few attained. The necessity of extreme carefulness and skill is now considerably diminished; in other words, the production of the most costly fabrics is laid open to a large number of operatives. Jacquard was originally a manufacturer of straw hats; and it was not till after the peace of Amiens had been signed that his attention was attracted to machinery. Happening one day to take up an English newspaper, his attention was arrested by a paragraph, in which the Society of Arts (to their honour be it recorded) offered a premium to any person who should weave a net by machinery. Dr. Bowring, who had a personal interview with him many years afterwards, tells us that the perusal of this extract awakened his latent mechanical powers, and induced him to turn his thoughts to the discovery of the required contrivance. He succeeded, and produced a net woven by machinery of his own invention. It seems, however, that the pleasure of success was the only reward he coveted; for as soon as accomplished he became indifferent to the work of his ingenuity, threw it aside for some time, and subsequently gave it to a friend as a matter in which he no longer took any interest. The net was by some means at length exhibited to some persons in authority, and by them sent to Paris. After a period had elapsed, in which M. Jacquard declares that he had entirely forgotten his production, he was sent for by the Prefect of Lyons, who asked him if he had not directed his attention to the making of nets by machinery. He did not immediately recollect the circumstance to which the Prefect alluded; the net was, however, produced, and this recalled the fact to his mind. The Prefect then rather peremptorily desired him to produce the machine by which the result had been effected. M. Jacquard asked three weeks for its completion; at the end of which time he brought his invention to the Prefect, and directing him to strike some part of the machine with his foot, a knot was added to the net. The ingenious contrivance was sent to Paris, and an order was thence dispatched for the arrest of the inventor."

Here, Dr. Bowring is in error. Napoleon's order was to the effect that M. Jacquard should be conveyed to Paris with all possible dispatch; and the spirit of those who interpreted the Imperial command led them to believe that nothing less strict than an arrest could be meant in the case of a man who threatened to injure the weavers of Lyons so seriously.

On his arrival in Paris, he was installed in the Conservatory of Arts, and set to work to make his machine on a large scale. He fashioned everything with his own hands; the wood-work and the iron-work were shaped by his dexterous and unerring arm. It is related of him that one morning he paused from his labours to consider the principle of a most complicated machine invented for the purpose of weaving a shawl for the wife of Napoleon. "His body bent, with his hands resting on his knees, which was indeed his ordinary attitude, his eyes were busy in every corner of the machine, and a droll smile half opened his lips as he inquired of the *directeur* under whose orders the workmen were employed—

"'Rather an expensive job that, sir!'

"'Twenty thousand francs!'

"'Diable!' exclaimed Jacquard; 'why in yonder corner is a machine, by Vaucauson, which, with a little attention, would answer the same purpose, and would not cost more than five hundred. It is a pity that serious attention is not paid to Vaucauson's clumsy invention, for it contains the principles of all combinations in weaving: I must look to that.'

"And away posted Jacquard, and shutting himself up in the workshop allotted to him, set to work with the saw, the chisel, and the plane. At first he constructed from memory a model of Vaucauson's machine, for he thought it would be convenient to carry to Lyons as a curiosity for his wife. Then, with the model before him, he made alterations; brought the principle to better application—simplified it. Nothing wearied his hand, nor fatigued his brain, whilst he thus laboured in the construction of a machine the most remarkable in its combinations, and the most wonderful in its results. Now and then, indeed, the perspiration would hang upon his forehead. His arms bare, his shirt sleeves tucked up to the elbows, and singing a Lyonnese air, as his busy plane kept time on the rough timber, the door of the chamber suddenly opened—it was Napoleon, the First Consul.

"'Well! Master Jacquard, my spinning machine?'

"'Premier Consul, it is completed.'

"But I cannot recognise, in the machine before me, even the form of the original model.'

"'Why, truly, the machine on which I am now employed is not for spinning, but for weaving silk stuffs; with this you may weave shawls like that intended for your wife.'

"'Is that its only use?' inquired Napoleon.

"'The idea is not entirely my own: Vaucauson inspired me with it. This machine, sir, this little trifle which you see here, contains, as I said yesterday, the sole principle of all combinations in weaving. It will simplify the labour of the weavers of articles of luxury, and will allow the workmen at the loom to be like other men are, without making them bandy-legged and hump-backed. You little know, sir, to what contortions of body—to what fatigues—the poor creatures are subject! The head workman, seated on a high stool, is compelled to fling out his legs right and left, to give the proper direction to the threads which the pattern and fashion of the work require. One or more workmen are employed to put the cords in motion: for this task, which is torture itself, children and young girls are employed; we call them *tireuses de lacs*. The unfortunate little creatures cannot go through their occupation without forcing themselves into positions which give rise to deformities, check their growth, and sow the very seeds of disease. With the blessing of God, I hope the machine I am now about will remedy all this."

"The First Consul took the mechanic by the hand, and said, 'Jacquard, you are a noble citizen!'

"He was sent back to his native town with a pension of a thousand francs, which was subsequently raised to six thousand francs. Notwithstanding the patronage and approval of Government, he had the greatest difficulty to introduce his improvement among the silk-weavers; and so great and blind was the animosity of these artisans against him, that he was more than once in danger of losing his life at their hands. The council of *prudhommes* ordered his loom to be broken in the public square of his town, to be sold as rubbish, and himself to be held up to public execration as an enemy of his species. The experience of a few years, however, sufficed to change the aspect of affairs totally; and he had the ultimate satisfaction of knowing that it was by means of the increased facility of production effected by his invention, that the looms of Lyons were enabled to compete with foreign markets."

The three years which intervened between the first and second expositions were fruitful with astonishing results. All classes of manufacturers were stimulated by the promising aspect of the first exposition, to represent as completely as possible the industrial skill and taste of the country at the second. The manufactories which, in the year 1798, were almost deserted, had resumed their wonted air of activity—Sedan, Rheims, Louviers, Sèvres, and Sallandrouze were again prosperous. Thus, the first great experiment, made in the midst of revolutionary clamour, and in the excitement of successful warfare, had undoubtedly the salutary effects of revivifying the dormant energies of the industrial population, and rescuing the manufactures of the country from the low state into which they had inevitably fallen during the rapid current of public events, when civil wars were waged to defend a sentiment, or to satiate a demagogue. The whirr of the looms burst once more upon the ear as the sword sank into the scabbard; and France, as she shook off the hideous nightmare of her revolution, turned gratefully to court again those serene triumphs which the industry and skill of Lyons, Sèvres, and Louviers had won for her in the face of the civilised world.

CHAPTER III.

NATIONAL EXHIBITIONS OF INDUSTRY UNDER NAPOLEON.

The three years which intervened between the first official exposition of France and the second were marked by rapid advances in all departments of agricultural and manufacturing skill. The impetus thus given by the first exposition was renewed with additional force by the second; and, although only twelve months intervened between it and the third exposition, the progress that had been made within that year was found to be almost unprecedented. As the number of competitors at the second of those expositions had doubled that of the first, so did that of the third exceed that of the second. The utility of such exhibitions had been fully proved by the two experiments; and on the third occasion the triumphs of a generous competition were evinced in a remarkable degree. M. Van der Weyer, speaking of Industrial Exhibitions, very pertinently affirms, that, "had similar competitions taken place earlier, the world would earlier have benefitted by many of the discoveries of modern times; and even the most important of late inventions—the steam-engine—would not have been left for other hands, had due publicity been given to the Marquess of Worcester's early experiments."† The careers of Jacquard and Vaucauson fully bear out the learned Belgian's position; since we find that the attention of the former was originally called to mechanical inventions by an advertisement issued by the London Society of Arts, and that the result of his ingenuity was published to the world through the means of the official exposition of France; while Vaucauson obtained his first public reward and acknowledgment at the third official exposition of his countrymen's skill and industry.

Several instances are on record of inventions having remained unnoticed and unrewarded in England. It is sufficient to mention the fly-shuttle, which was not introduced into the weaving of cotton till more than twenty years after its invention; and the apparatus for spinning by machinery, said to have been invented by a Mr. Wyatt of Lichfield, so early as the year 1735, but of which not even a model now remains.

"William Lea, a clergyman, invented the first stocking-machine in 1589, and made a pair of stockings by his frame in the presence of James I. His invention was discountenanced, upon the plea that it would deprive the industrious poor of their subsistence. He went to France, where he met with no better success, and died at last of a broken heart."‡

The most remarkable feature of the exposition of 1802 was the progress it showed in the application of machinery and chemistry to industrial improvement. Twenty-two gold medals were distributed on this occasion. Among the prize-holders were Aubert, who exhibited his stocking-frame; Montgolfier, who sent his hydraulic ram; and Vaucauson, who produced his silk-spinning machine. This machine has been alluded to in a previous chapter, as that which suggested to Jacquard the idea of the invention which has immortalised his name. These inventions, destined to change the face of the commercial world, to provide labour for the yearly increase of the populations of civilised states, and to lay the foundation of the brilliant era which is now dawning upon the world, though they were received as productions worthy of the most honourable prizes, did not create that enthusiasm which great improvements in machinery now call forth. Indeed, in those times the industrial world, so narrow was its view, regarded improvements in machinery as invasive of the mechanic's best interests. The words in which M. Jacquard's machine was described in the report of his jury were suggestive. In proportion to the general enlightenment of a people is the popularity of inventive genius. When, in the year 1695, M. de Gennes made his first attempt to weave by machinery (his loom is described in the "Philosophical Transactions" for 1700†), his efforts created little attention, and, probably, not the faintest applause; and when Hargreaves discovered his ingenuity to the world, his skill was rewarded with persecution. Even now, men exist beyond the walls of Bedlam, who look with a longing gaze to the weavers of Bandar Abassi, who, like the Hindoo weavers, perform their work in the fields. They would be glad to see the spinning-jenny and the Jacquard loom cast aside or burnt, and behold the Spitalfields weaver lay his warp upon the ground, dig a hole for his feet, and work with a reed tied to a tree for his shuttle. "Yet," interposed Col. Perronet Thompson, who was called upon to argue the question of "machine breaking" so late as 1830, "if Noah and his family, when they came out of the ark, had held a council upon the best way of providing themselves with the comforts of dry land, it would have been a strange line of argument for one of the household to have pointed to the stock in trade which had escaped the deluge, and said, 'This is a plough,' and by harnessing the clean beasts to it, you would do six times as much work as with the spade; therefore, break the plough, and take the spade. Your wife, too, has a spindle, with which she can spin so many threads in an hour; but I could show her a way that would not spin half as much. Let us be machine breakers, and then we shall all be comfortable.'" The benefits of machinery, however, are easily proved; but it has been a hard fight to persuade the hungry workman, temporarily deprived of his employment by a few ingeniously-contrived cog-wheels and cranks, that he should hail the advent of his present enemies for their promises of future good. It was, therefore, a bold step, when manufactures were once more reviving in France, as the tides of revolutionary blood rolled away, to award gold medals to such inventions as Aubert's stocking-frame, and Montgolfier's hydraulic ram.

MM. Decroiselles, of Rouen, and Aumfry and Darset, of Paris, were also the recipients of gold medals as rewards for the excellence of their chemical products. The attention which French chemists have, for a long time, given to the production and perfection of dyes, has won for the dyes of France a reputation which we are only now endeavouring to equal. From the remote antiquity when the purple wool (the sacred symbol of Royal and sacerdotal dignity), which formed the staple article of Tyre's commerce, was valued at a hundred crowns, experiments have been constantly going forward, to extract various colours from a thousand different substances, both animal and mineral. Hardly a plant, an animal, or an earth, have escaped the scrutiny of the experimentalist. Gage, Cole, Plumier, Reaumer, and Duhamel have endeavoured to extract a purple, like the famed Tyrian dye, from various shell-fish, but without success.‡ The names of honourable renown in these researches belong mostly to France—Plumier, Reaumer, Duhamel, Hellot, Dufoy, Berthollet.

The popularity of this third official exposition was worthily followed up. We may fairly attribute the practical intelligence which suggested the Société d'Encouragement to the First Consul. The object of this society was to stimulate the ingenuity and artistic force of the country by the award of premiums. In its first programme we find Napoleon the holder of one hundred shares, M. Recamier of fifty, and the Minister of the Interior of fifty. The premiums offered at first amounted only to small sums, but the Parisian Society of Arts and Manufactures of the present day tempts native talent by the annual award of vast amounts. The youth of France are prepared fully to enter into the quinquennial competitions which their government calls them to engage in. Sir David Brewster, in the course of his introductory address, delivered in July, 1850, to the British Association for the Advancement of Science, when referring to the encouragement which the various governments of France had unanimously accorded to the arts and sciences, said very pertinently:—"Owing to the prevalence of scientific knowledge among all classes of the French population, and to their admirable system of elementary instruction, the advancement of science, the diffusion of knowledge, and the extension of education are objects dear to every class of the people. The soldier as well as the citizen—the socialist, the republican, and the royalist—all look up to the National Institute as a mighty obelisk erected to science, to be respected and loved and defended by all. We have seen it standing unshaken and active amid all the revolutions and convulsions which have so long agitated that noble but distracted country—a common centre of affection, to which antagonist opinions, and rival interests, and dissevered hearts have peacefully converged. It thus becomes an institution of order, calculated to send back to its contending friends a message of union and peace, and to replace in stable equilibrium the tottering institutions of the state. In a great nation like ours, where the higher interests and objects of the state are necessarily organised, it is a singular anomaly that the intellectual interests of the country should, in a great measure, be left to voluntary support and individual zeal—an anomaly that could have arisen only from the supineness of ever-changing administrations, and from the intelligence and liberality of a commercial people—an anomaly, too, that could have been continued only by the excellence of the institutions they have established."

It is unnecessary to recapitulate the overwhelming advantages which the French mechanic has long had in artistic education over the English mechanic. The recent introduction of Schools of Design sufficiently demonstrates the difference that has existed between the chances of the competing operatives; and where even now, shall we find gratuitous schools in London for drawing and painting similar to those which exist in every one of the twelve arrondissements of Paris? These fine national institutions have yielded to France the reputation which she now holds of leading, in matters of taste, the manufactures of the world. Under the sagacious rule of the Emperor the commercial value of art was fully recognised; and although four years elapsed between the third exposition and the fourth, no time was lost in the interval.

On this occasion the national exhibition of industry was held in a spacious building erected for the purpose on the Esplanade of the Hôpital des Invalides. It is only necessary to compare the textile goods manufactured in France in the year 1801 with those manufactured in the year 1806, to see at once the marvellous rapidity with which improvements had been introduced. At this exhibition the printed cottons of Mulhausen and Fogelbach (manufactures which have been ever since highly esteemed in every quarter of the globe) first made their appearance.

The elegance of design and beauty of dye for which these manufactures are still celebrated, have saved the manufacturers of Alsace from irrevocable ruin. Mr. Thomson fairly shows, from the statistics of a Mulhausen manufacturer, M Koechlin-Schouch, that it has long been impossible for a Rouen or a Mulhausen manufacturer to compete with a Manchester cotton firm. The case stands therefore simply thus—that while France has been developing the artistic faculties of her workmen, the people of England, less sensitive, from the want of national education, and perhaps constitutionally, to the beauties of form and colour, have advanced in the power of simple production. Manchester can produce a printed calico at a greater speed than Rouen; but Rouen can imprint the finer designs and dyes upon its fabric.

Cotton lace, blonde, silk thread, cloth, imitations of Cashmere shawls, and various mixed textile fabrics, also illustrated the manufacturing progress of France, in the industrial exhibition of 1806. In the manufacture of iron and porcelain progress was decidely shown. These cheering results of Napoleon's vigorous efforts to restore the manufacturing prosperity and reputation of his country were manifested in the last exposition which took place under the Empire.

It is noticeable, as indicating the general tendency which the various

* A Republic, the destruction of which had already been determined upon by a genius to whom the national adulation offered that absolute power which eventually ruined him.—*Baron Charles Dupin.*

* William of Malmesbury declares of Pope Sylvester II., that he erected an organ which was played by steam; and, though we cannot rely very implicitly on the authority of this most credulous historian, the anecdote deserves to be noticed, as a proof that the use of steam as a motive power was partially known, or at least suspected, as early as the 11th century.—*Taylor's Revolutions of Europe.*

† Charles Knight's "Capital and Labour."

‡ A machine which *suppresses* a workman in the weaving of figured goods.

‡ Indigo, one of the most useful of all dyes, was denounced as a dangerous drug by Parliament, and it was forbidden in the reign of Elizabeth: this was only repealed in the time of Charles II.

ruling powers of France have shown to cultivate native manufactures and arts, that her national exhibitions have celebrated the dethronement of the Bourbon family, being fostered by the bitterest enemies of the Bourbons, and have inaugurated the restoration of the Bourbon Monarchy. It is impossible not to discover, in this constant solicitude for the alliance of art and manufacture, the source of that artistic greatness which has made the French people the leaders of taste in every part of the world. The alacrity with which their example in holding periodical exhibitions of native industry has been followed by other countries, and the invariable good which has resulted from them, induced the Baron Charles Dupin to preface the report of the jury for the exposition of 1834 with this sentence:—"Thus, the constantly increasing success of the exhibitions of our industry has attracted the attention of foreign powers. Nearly all the governments of Europe have endeavoured to follow our brilliant example, even those which appear to be the least progressive in their principles. Austria, Spain, Piedmont, Portugal, the two Sicilies, Holland, Prussia, Bavaria, Denmark, Sweden, and Russia, have established national expositions, with such success that they have made them periodical. Among all the powers in Europe, England alone thinks herself too rich and advanced to need recourse to such a stimulant." A fourth chapter will bring the history of the exhibitions of France to a close; and a fifth chapter will treat upon those of Belgium, in which country they have been held, it may be stated at once, with signal and unfailing success.

CHAPTER IV.

EXPOSITIONS OF FRANCE.—(CONTINUED.)

NAPOLEON'S commercial policy, extolled so often and so loudly for its penetration and completeness, was, however, marred by the force of his prejudice against England; since we find that while, on the one hand, he was endeavouring to encourage and elevate native industry by industrial exhibitions, and the establishment of gratuitous educational institutions, on the other hand, he could not forbear from the vindictive exclusion of English manufactures from the French territory. He prohibited the importation of British muslins, cotton cloth, both plain and coloured, and other cotton articles; while he subjected cotton thread to a heavy duty. After the close of the fourth official exhibition, in 1806, and the dispersion of the rival manufacturers who competed at it, a long interval succeeded, in the excitement of which little attention could be bestowed upon the peaceful battles of rival industries.

The European strife for freedom against the ambition of the Corsican sub-lieutenant, the dethronement of the eagle, the struggle of legitimacy, the restoration, the hundred days, the heroic valour still celebrated at Apsley House, the imprisonment of the mighty emperor on a rock—all these events, which are landmarks in the history of the last half-century, stunned the ears of nations, and made them deaf to the glories which yet shone, alas fitfully, and with unsteady radiance, athwart the path of the man of science, the man of letters, and the man who realises. Commerce paled before the bloody eagles of France, the serried ranks bristling with steel, the hundred-fanged war-ship, the roar of battle, the thunders of death! An exhibition of industry while Parisians were intoxicated with the glories of Jena, the stirring story of Arcole, the blast of fame rising from Jemappes! No! the rolling drums must drown awhile the whirr of the shuttle, the weaver must even doff his head-gear to Mars. But now the idol is caged, the warrior's crest droops, the tramp of alien feet rings through France; and amid the rejoicings and intrigues which mark the restoration, the sails of merchantmen pant in the breeze, Korchlin pursues his honoured labours, Raymond and Widmer de Tony exult in their chemical successes; and Jacquard, unhappily the Adam Warner of his time, reappears on the scene.

After an interval of thirteen years, in compliment to the restored monarchy, as the last had been to the glory of the man now dethroned and disgraced, splendid galleries were raised in the Court of the Louvre to celebrate the *fête* of St. Louis, by assembling all that the skill and genius of the country could bring to swell the national pride in the excellences of native manufactures and arts. The great feature of this exhibition was the marked improvement in the manufacture of metal—a department of industry in which France was (and is) far behind other countries, as, for instance, England, Prussia, and Belgium. In 1806 the only foundry in France was that at Creusot; but in 1819 the furnaces of the Loire and other places sent excellent specimens of metal manufacture to the national exhibition. On this occasion, however, some admirable specimens of rolled iron from the forges of Grossomore were presented; and bronzes, stereotype plates, and other metal manufactures of delicate workmanship, attested, by the excellence of the specimens presented, that the French artisans who had escaped the wars had not rested from their labours.

This exhibition showed the rapid progress the country had made in the manufacture of steel, since exhibitors from no less than twenty-one departments showed excellent specimens of this commodity; and in every branch of manufacture where steel was used, most encouraging improvements were displayed.

In machinery John Collier exhibited a model of his machine; and Jacquard (who, in the exhibition of 1801, gained a bronze medal) exhibited a model, which was highly eulogised by the authorities, and for which he was decorated. It is an encouraging sign of the times, that the children of the Lyonese who burnt Jacquard's machine have lately erected a statue to the memory of the inventor in one of their public squares.

The results of machinery about this time began to be properly appreciated; and manufacturers, taking advantage of the cheapened means of production, began to compete for cheapness, as well as elegance of design, and, by this means, to bring their manufactures within the reach of the great masses of their countrymen.

The labours of Daniel Kœchlin, of Mulhausen, which have tended so materially to bring the printed calicoes of France to their present high artistic excellence, bore some of their welcome fruits to the national exhibiton of 1815. Dr. Ure, who visited M. Kœchlin's establishment at Mulhausen, reports that so profoundly had this eminent man studied his manufacture, more particularly with regard to the nature and properties of dyes, that he had in the laboratory attached to his establishment upwards of 3000 labelled phials, filled with chemical reagents and specimens subservient to dying.* The history of calico-printing, both in England and France, presents a moral which the histories of too many inventions unhappily furnish; viz. that it is childish and short-sighted on the part of a class to endeavour to impede the result of inventions for increased production. Not many years after, the merchants of Paris, together with those of Rouen and other districts, declared that "they came forward to bathe the throne with their tears on the inauspicious occasion" of the establishment of cotton fabrics upon a footing of equality with other industries. The Inspector-General of Manufactures appealed to the bodies still discontented in these terms:—"Will any of you now deny that the fabrication of printed cottons has occasioned a vast extension of the industry of France, by giving profitable employment to many hands in spinning, weaving, bleaching, and printing the colours. Look only at the dyeing department, and say whether it has not done more good to France in a few years, than many of your other manufactures have in a century?"

Other names of eminence occur in the report of the jury. Among the exhibitors who were decorated were Vitalis (the Kœchlin of Rouen); Raymonde of Lyons, who had invented a process for fixing a Prussian blue dye upon silk; Widmer of Tony, who gave to the manufacturing world a green dye of immense value (for the invention of which a prize of 2000 guineas had been offered in England); Arpin, the muslin manufacturer of Saint Quentin; Bacot, cloth manufacturer of Sédan; Beauvais, Depouilly, and Mallée, silk manufacturers of Lyons; M. Beaumier, who helped to found steel manufactories in France; Firmin-Didot, the eminent printer; Utzschneider, of the Sarreguenines potteries. On this occasion the title of Baron was given to MM. Ternaux and Oberkauf, the decoration of St. Michael to M. Darcet. 360 medals and 17 crosses of the Legion of Honour were distributed among the 1662 competitors who appeared at the exhibition. Altogether, the jury found that no less than 809 of the exhibitors deserved honourable mention.

Four years elapsed after the close of the fifth exhibition before the manufacturers were again summoned to Paris. In 1823, the national exhibition, though deficient in very remarkable productions, and showing a decrease in the number of exhibitors from that of 1819, gave evidence of still further national progess in the application of metals to the purposes of manufacture and to the requirements of engineering. The most noticeable item in the galleries, but which the jury treated coldly as impracticable, was, according to Mr. Digby Wyatt (whose reputation as an architect entitles his opinion to particular consideration), a model of the first French suspension-bridge, designed by MM. Séguin frères, to be thrown across the Rhone, near Tournon. This model obtained only a silver medal.

* The art of calico-printing is of ancient date in India; and, indeed, derives almost its name from Calicut, a district famous for the Indian manufacture.

It is remarkable evidence of the increasing popularity of these exhibitions, that the authorities found it necessary to extend the time at each successive exhibition. Thus, while the first exhibition remained open only three days, the sixth was accessible to the public for fifty days. On this occasion, notwithstanding a falling off in the number of exhibitors, the jury decided to distribute no less than 1091 rewards among the competitors.

The report of the jury of this exhibition includes notices of many improvements in native textile manufactures, in the processes of metal manufacture, in dyes, in optical instruments, and in papers.

Another interval of four years elapsed between the closing of the sixth and the opening of the seventh national exhibition. The exhibition of 1827 was in every respect a great advance upon all preceding exhibitions. The building in the quadrangle of the Louvre was on a larger scale than before, and the number of exhibitors amounted to 1795. The progress of national manufactures, and the effect of the use of steam power upon production, were here remarkably shown. The manufacture of merino goods, which in the beginning of the century was unknown in France, now represented an annual value of 15,000,000 francs; and shawl manufactures gave proof of a progress equally sudden and extensive. The improvement and extension of merino manufactures may be traced back to the notable exertions of Chaptal and others to improve the native fleece by interbreeding with the Spanish flocks, which were noticed in the exhibition of the year IX. of the Republic. In the silk trade great advances had also been made. The cultivation of silk, which had been restricted to the southern departments, in the belief that the mulberry would not flourish in the northern departments, was now extended to those colder lands, and found to produce silk of a purer and finer quality than that hitherto raised in the south: floss silk was introduced into many new kinds of material; and mixtures of silk and wool first appeared at this exhibition. In printed cottons ginghams, tulle, and blonde, splendid specimens were displayed, the cheapness of which was as remarkable as their excellence. The results of the application of machinery to every department of manufacture were shown in every article exhibited. Paper-hangings, which French manufacturers could now, with the aid of machinery, produce in endless lengths, and which for artistic excellence surpassed those of England, now first enabled France to compete with us successfully in this respect. Breguet exhibited cheap chronometers (priced as low as £40 each). Vicat came forward with some improved and new cements; and from Sèvres some some fine specimens of stained glass marked the restoration of this beautiful manufacture.

The dawn of promise which the seventh national exhibition of France held up was soon clouded by the rapid development of political events which preceded the days of July, and the elevation of the Orleans branch of the Bourbon family to the throne of the French people. The seven years which intervened between the seventh and eight official exhibitions were marked by those commercial disasters which invariably follow political and social discord; however, when, early in 1834, the Government appealed to the manufacturers of France to submit specimens of their products once more to a national jury, no less than 2447 exhibitors responded to the official overture.

Four great galleries were erected upon the Place de la Concorde, and the exhibition was opened with great solemnity. The result was worthy of the importance given to the exhibition. The manufacturers of France had profited by previous experience, had learned to hail the long proffered concurrence of science with art, and accordingly they were enabled to give evidence of a still further progress in the development of the laws and products of nature to the wants of man. The man appointed to preside over the juries was equal to the important occasion; and the elaborate, sound, and elegant treatise on the development of French industry, which he prefixed to the report on the exhibition, is now fairly cited as a work of commercial reference, and relied on as the labour of an experienced man and an acute logician. In this report will be found a luminous history and analysis of the progress of French manufactures from 1789 to 1834. He shows, as illustrative of the increased study of machinery, that whereas, in 1798, only ten patents were taken out, in 1834 no less than 576 were issued. Giving justly every consideration to the promoters of national exhibitions, he shows how progress in native manufactures was co-extensive with the encouragement of machinery; and he might well affirm, since the inventions of Jacquard, Collier, Vaucauson, Montgolfier, Aubert, were first brought into public notice at these gatherings of industry, French manufacturers had reason to encourage the quinquennial lists they were called upon to enter. During the seven stormy years which separated the seventh from the eighth exhibitions, the progress made in the construction and adaptation of machinery to manufacturing purposes had revolutionised French commerce. The introduction of cylindrical blocks to paper-printing earned a gold medal at this exhibition for MM. Zuler, of Mulhausen, and increased this manufacture beyond the hopes of the most sanguine. Shawls had fallen between 30 and 40 per cent. in value since the close of the exhibition of 1827; the silk trade had increased with rapid strides; flax-spinning was becoming a popular branch of industry; and cotton manufactures, after a protracted and calamitous depression, were reviving apace. While Normandy produced printed cottons of a comparitively coarse and common description for the use of the great industrial classes, Alsace sent forth specimens of printing, which for their brilliant dyes, superiority of design, delicacy of shades, and beauty of manufacture, commanded for a long time the London market. Alsace alone at this time produced annually no less than 720,000 pieces of printed cottons, valued at 24,000,000 francs. The jury of 1834 commended highly the excellence of this brilliant manufacture.

A new manufacture was introduced to public notice at the Exhibition of 1834, which has since become of considerable importance, viz. elastic threads manufactured from India-rubber, by MM. Rattier and Guibal, who were rewarded with a gold medal.* For the production of some exquisite specimens of marqueterie and ornamental cabinet and inlaid work, this exhibition was remarkable, as well as for some specimens which indicated the revival of the art of wood-engraving, and works which promised to rival the productions of the middle ages, in enamel and "niello," sent in by MM. Wagner and Mansion. The arts were indebted to M. Gnymet, of Lyons, for the fabrication of an artificial ultramarine (now well known to all artists as French ultramarine), which was first publicly presented in the exhibition galleries of 1834; and the potteries of France exhibited specimens of a new combination of clays, which was called opaque china, and which was recommended for its superiority to earthenware and for its comparative cheapness. These brilliant achievements of French industry were rewarded by the distribution of 697 medals and 28 decorations of the Legion of Honour.

On the 1st of May, 1839, the ninth official exhibition of industry was opened to the French people. The increased demand for space had necessitated the construction of an immense building upon the Carré de Marigny of the Champs Elysées. No less than 4281 exhibitors contributed to the great national bazaar. A superficial space of 16,500 square metres was covered in to receive specimens of the goods of French manufacturers exclusively; and, in addition to this vast space, it was found necessary to construct a separate building to receive the splendid products of Mulhausen. The exhibition showed the manufactures of France as far in advance of their condition of 1834, as in that year they had advanced from their state of 1827. The export trade of the country had increased in an extraordinary degree; and the peculiarity of the exhibition of 1839 was the cheapness at which all the manufacturers endeavoured to produce. The importance attached to the cheapness of production at this period is shown in the classification adopted by the jury. Thus, the first section comprised inventions and improvements, ranged with reference to the importance of their results in manufactures; the second comprehended the importance of the factories, and their situation; the third, the actual and commercial value of the products; the fourth, the cheapness realised by increased means of production. Here may be discovered a glimpse of the result for which the supporters of these institutions had all along laboured. The rewards and honours bestowed upon Jacquard, Aubert, Ternaux, and Oberkauf; the learned dissertations of Chaptal and Costoy; the public drawing academies; the general knowledge attained by every Frenchman of the manufacturing capacities of every district of his country, were beginning to return their promised measure of fruit. The artisans of France were fast becoming artists; the manufacturers, scientific men; the manufacturers of sabres, builders of steam-engines. The framers of the report proudly described the growing greatness of manufacturing France. They found that their manufacturers had completely established the spinning of wool by machinery, and were making great efforts for the cultivation and manufacture of flax. They saw that the extension and improvement of machinery were the foundation of their successes. The cylindrical block paper machines, exhibited as a novelty at the exhibition of 1834, were now exported from France to all the manufacturing states of Europe; Jacquard's machine had been multiplied and improved; M. Guimpé had invented an ingenious mechanism for wood carving; well-boring instruments had been materially improved: France, that in the beginning of the century possessed only about a dozen steam-engines, now employed fifty foundries in the construction of these machines; warranted chronometers were now valued at half the price they fetched in 1834; needles (in the manufacture of which England had hitherto enjoyed a complete monopoly) were at this time bidding fair to rival those of Birmingham.

Two new materials were also offered to the commercial world at this exhibition—stearine, and Prussian blue dye. In glass and porcelain manufacture, improvements had been no less rapid than in the manufacture of textile fabrics; and the art of preparing leather had advanced so far, with the aid of enlightened chemists, that France, which, in 1830, imported tanned leathers from England, had reversed this order of things, and now exported her prepared hides to the British markets. Fine lithographic stones, which had recently been discovered in one or two departments, figured at this remarkable exhibition; and the marble quarries of the Pyrenees contributed some splendid specimens of this beautiful material. Lemer declares, in his work on native exhibitions, that the most hopeful character of the exhibition of 1839 was the cheapness of all the manufactures—the diminution in the cost of preparing raw materials for the use of man. "Spun and woven goods, tools, furniture, begin to find their way into the houses of the humble—thanks to the genius which directs industry."

(To be Continued.)

* "The original manufacturer of elastic webs is a Major in the Austrian service, who has erected a great factory for them at St. Denys, near Paris."—*Dr. Ure.*

THE ENGRAVINGS.

OPENING OF THE EXHIBITION.

WE this week present our readers with four additional Pictures from the Industrial Festival of the First of May; with four Illustrations of kindred interest in the Number published with the present Supplement. First, upon the front page is

THE SERPENTINE.

Before the arrival of the Royal procession, and after its passage, the Serpentine was a point of great attraction; its banks being lined with thousands of spectators, gazing upon a beautiful miniature frigate which floated upon its surface. Another attraction was a gentleman floating upon a mattress, in the form of a canoe, and who, with the aid of delicately shaped and tiny paddles, swept gracefully along the water, taking care, however, not to venture jar from the bank.

The beautiful model of a 20-gun frigate is named the *Prince of Wales*, and was launched on the Serpentine on Monday morning, having been brought from Woolwich on the previous day.

THE CHINESE MANDARIN.

The second Illustration upon the front page is very characteristic. Among the circle surrounding the dais upon which her Majesty was seated, the Mandarin He-Sing, of the Chinese Junk *Keying*, was conspicuous. The Mandarin arrived at the Crystal Palace at about half-past ten, in a carriage, attended by his secretary, and, on his entrance, he was immediately introduced into the area reserved for the Great Officers of State, and the Royal and Foreign Commissioners. After the gracious reply of her Majesty to the address read by the Prince Consort, the Mandarin He-Sing was specially noticed by her Majesty; and the important functionaries between him and the Queen having separated on either side, the Mandarin approached the throne, and had the high honour of saluting her Majesty by a grand salaam, which the Queen most graciously returned. The Mandarin was also much noticed by the young Prince of Wales and the Princess Royal.

On the formation of the Royal procession round the Building, Prince Albert, at the suggestion of the Queen, was pleased to convey to the Mandarin a special request that he would join in the procession; and he, accordingly, took his place between the Archbishop of Canterbury and the Comptroller of her Majesty's Household, and accompanied the Royal progress throughout the inauguration ceremony. It should be added, that the Mandarin was the only representative, at the Exhibition opening, of the vast empire of China.

ENTRANCE OF HER MAJESTY AND PRINCE ALBERT.

The large Illustration at page 398 shows the entrance of her Majesty and the Prince Consort, accompanied by the Prince of Wales and the Princess Royal, and their attendants, into that portion of the North Transept immediately adjoining the Royal daïs.

After her Majesty had left the robing-room, a second flourish of trumpets announced her approach, when the bronzed gates leading into the transept were flung open, and the full crash of chorus, band, and organ burst into "God save the Queen," only to be drowned by the acclamations which simultaneously arose from floor and galleries, from nave and aisles, as the Royal procession advanced.

Following the Lord Chamberlain, and a group of the principal officers of the household, all of them walking backwards, and ushering in her Majesty, came the Queen, leaning upon the arm of Prince Albert, and holding the Prince of Wales by the hand; the Prince Consort conducting, in like manner, the Princesser Royal. Following the Royal group was a glittering line of Lords and ladies—the uniforms and Court dresses of the gentlemen contrasting with the toilettes of the maids of honour and ladies in waiting. Close to her Majesty walked the Prince of Prussia, with the Duchess of Kent on his arm; then followed a long line of officers of the Court, &c. Next, at page 399, is represented

THE PROCESSION.

After the "Hallelujah Chorus" had been sung, was formed the Royal procession to conduct her Majesty through the Building: the groups gathered round the dais filing off in slow and stately order, led by heralds in their superb surcoats; the various officials of the Exhibition in court dresses; the diplomatic corps in their various costumes; the Duke of Wellington and the Marquis of Anglesey; her Majesty's Ministers, the Archbishop of Canterbury, the Officers of the Royal Household, her Majesty and the Prince Consort, the Prince of Wales and Princess Royal, and their Royal relatives, foreign visitors, and the Court attendants. The passage of the procession (seen from an elevated position) was very striking.

Turning to the right, the procession moved to the west end of the nave on the north side, down a deep lane of human beings, full of loyal expectancy. Her Majesty and the Prince were preceded by the Lord Steward, Lord Chamberlain, and Vice-Chamberlain. The *coup d'œil* varied at every step, yet was always picturesque and beautiful. The Foreign Commissioners, whose labours had hitherto confined them to their own department of the Exhibition, gazed with wonder at the development of British industry by which they found themselves surrounded. The Indian and Colonial collections were left behind, the Fine Arts Court passed, and the procession, cheered unceasingly in its progress, moved into the area devoted to our many-featured manufacturing products. The pageant reached the western entrance, and saw itself, and the unequalled grandeur of the scene whereof it formed the leading feature, reflected in the immense mirror exhibited at this point. When it was returning on the south side of the nave, the gigantic organ by Willis suddenly rolled forth its billows of sound. The effect was extremely fine. Displays of textile fabrics, of hardware, of cutlery, and of furniture; vistas of courts and avenues filled with the richest materials, crowded upon the wondering gaze of the spectator. Still, upon the mind, the grand impression left was the magnificence of the general spectacle, the loyalty of the great assemblage, the cordial understanding between the Sovereign and the flower of her people; above all, the hearty union of all classes in celebrating with becoming pomp this inauguration of a temple dedicated to industry and peace. At length, the procession reached the transept, and proceeding round the south end, entered the Foreign department of the Exhibiton, and moved onward amid loud acclamations. The French organ, by Du Croquet, and that from Erfürt, by Schulze, each in turn poured forth its music; and as the pageant rounded the eastern end of the Building, the bands of the Coldstream and Scots Fusilier Guards varied the performance by their spirit-stirring strains. The return along the north side of the nave renewed the enthusiasm of the foreigners and visitors assembled there. The enthusiastic cheering went on continuously around the Building; and at last, having completed the *détour* of peaceful triumph, the Queen returned once more to the position in the transept where her throne was placed.

1.—TABARET. BY R. ATKINSON AND CO., DUBLIN.

A not very excellent arrangement of the imperial emblems, the rose, shamrock, and thistle. The texture of the original article is, however, its best feature, and one which will be better appreciated in the market than in the Exhibition.

2.—SHAWL PATTERN, BY JAMESON AND BANKS.

This is an example of a series of valuable articles of this class, exh

bited not only by this house, but others. In the specimen before us there are many excellent points, and, probably, the fine pattern could not easily be treated with a better result. It is singular for what a length of time this type has kept in vogue, and whatever may be the colour or detailed character of the design of a shawl, it is inevitable that it begins and ends with a pine.

3.—DESIGN FOR A DECORATIVE PANEL. BY W. A. PAPWORTH.
4.—ANOTHER. BY J. W. PAPWORTH.

Two very rich and elegant designs for panelling, the one in the pure Greek, the other in the more florid Roman style. These are in the Fine Art Court.

26.—GODFREY DE BOUILLON.

5.—CARVED BOOKCASE. BY THE SOCIETE DES EBENISTES.

A very beautiful design, very successfully carried out; speaking highly for the taste of our French neighbours in the decorative art.

6.—MR. MOXON'S WALL DECORATION.

The decoration represents the end of a drawingroom in the Elizabethan style. The fittings, glass frame, and exquisite chimney-piece containing a medallion of Chaucer, and groups from his most celebrated poems, are by Mr. Thomas, whose fertile genius has so much enriched the New Palace at Westminster.

The beautiful grate was manufactured by Mr. Jeakes.

The polychrome and gilded decorations are by Mr. C. Moxon, of High-street, Marylebone, whose works at Buckingham Palace and several mansions of the nobility are well known.

The panels consist of a diaper of flock and gold, on a very pale tint of amber, surrounded with a bold moulding of white and gold. The styles are a light tint of lavender colour. The frieze is white marble, with a flowing scroll ornament of giallo antico and sparkling gems of lapis lazuli, malachite, and rubies, and inlaid gold. The cornice is white marble, with inlaid mosaic gold ornaments. The capitals are white and gold on lapis lazuli ground. The upper portions of the columns are in flutes of brocatella and white marble. The lower is ornamented with an Elizabethan scroll-work of giallo antico on green ground, inlaid with gems of lapis lazuli, malachite, and jasper. The lower part of the columns is separated from the upper by an ornamental fret of giallo antico on a deep red griotto ground, with lozenges of malachite and lapis lazuli. The plinth is of solid gold, and the base mouldings of Scotch jasper Galloway green. The dado is in panels of green and Sienna styles, separated by ornamental lines of white, inlaid with griotto. Gold and white mouldings run at the top and bottom of the dado, in parallel lines, and the whole is finished by a light dove-coloured marble skirting, which harmonises with the lilac tints on the upper styles, and produces a chaste and perfect combination of colour. It is impossible by engravings to represent the beautiful colours, the richness and marvellous transparency of these imitations of marbles, in which Mr. Moxon has rivalled the varied tints of nature with great fidelity, and this novel application of painted mosaic for decorative purposes may be considered perfectly successful.

7.—TIEN DE CORSAGE. BY MESSRS. BOUILLETE, HYOCLIN, AND CO.
8.—BRACELET. BY THE SAME.
9.—BROOCH. BY THE SAME.

Three very tasteful articles of jewellery, displayed amongst various other costly productions by this celebrated house.

10.—LAMP. BY M. SUSSE.

This lamp exhibits much more of design than the common run of ornaments in which caryatids are employed.

11.—KEITH'S SILK TROPHY.

For description see article on Silk Manufacture, page 394.

12.—MESSRS. JAMES HOULDSWORTH'S BLUE AND GOLD DAMASK.

Of silks we have not been able to say anything in our glance at the textile fabrics, except in noticing the trophy in the central avenue. The Illustration of this department is from a very admirable brocatelle manufactured by Jas. Houldsworth and Co., of Manchester, and is a really effective and excellent example of the skill of this house. The arrangement is full and complete, and the curves well distributed.

13.—POPLIN IN BLUE AND GOLD. BY MESSRS. R. ATKINSON AND CO., DUBLIN.

This is an excellent example of conventional treatment, inasmuch as it affords the greatest possible facility for the introduction of "plate," as the gold thread is technically called. The arrangement of figure is very simple; and of the texture, we can only say that it is equal in quality to anything of the kind in the Exhibition.

14.—MESSRS. DALGLEISH, FALCONER, AND CO.'S PRINTS

Have been quoted as good examples of their class. The Illustration is from a muslin, and the design is at once graceful and appropriate, the printing clear and distinct, whilst the drawing is well understood and perfectly adapted to the fabric.

15.—MESSRS. BRIGHT'S PATENT TAPESTRY.

Our Illustration shows the arrangement of one of the specimens of Bright's patent process of printing tapestries for curtains, &c. The general arrangement of the design is good, and the effect excellent as a whole, but heraldic emblazonments are not precisely appropriate to the Eastern character of the design.

16.—CENTRE-PIECE. BY SMITH AND NICHOLSON.

A striking evidence of the progress which the purer principles of art, as applied to decorative purposes, have made in this country.

17.—CANDELABRUM. BY ANDRE.

A very pretty design in iron, by M. André; the branch being supported by a female figure. The pedestal is richly decorated in the *rénaissance* style.

18.—CENTRE-PIECE. DESIGNED BY SHARP.

The base of this magnificent candelabrum is of a triangular form, with lions at each corner, supporting shields for armorial bearings. On the base, the group of St. George and the Dragon are fighting round the shaft. The knight, having wounded his reptile opponent with his spear, is about to deal the deadly blow with his sword. The vine shaft supports branches for nine lights, and basket for flowers. It has been produced in electro plate, upon German silver, by Mr. Anelay.

19.—A GROUP OF BRONZES. BY VITTORY,

Comprises a variety of exquisite subjects, finished with the nicest artistic skill. Prominent in the centre of the group is a statuette of Benvenuto Cellini.

20.—TRITON. BY ANDRE.
21.—VASE. BY ANDRE.

Two very elegant specimens of decorative iron. The triton, intended for a fountain, is full of spirit, and the outline extremely graceful. The vase is of almost classic merit.

22.—FRAME FOR A LOOKING-GLASS. BY HANSON.

This elegant production is of oval form; richly carved in wood, with devices in flowers, fruits, birds, squirrels, &c.

23.—BOOK-COVER IN CARTON DE PIERRE. BY JACKSON AND SONS.

A very elegant production in *carton de pierre*, pierced, over velvet. The composition in the cinque-cento style.

24.—BLOTTING-BOOK COVER. BY C. ASPREY.

This is one of the richest specimens of pierced work, in or molu upon velvet, we have ever witnessed. The details are of endless and beautiful variety. It was executed as a commission from a gentleman, whose arms are accordingly displayed in the centre.

25.—A GROUP OF BRONZES. BY P. J. MENE.

This group comprises the following subjects:—Dead game, a hare and a pheasant; a stag hunt; a boar hunt. The second-named was exhibited at the Louvre in 1844; and the third was exhibited at the Louvre in 1848, where it obtained a gold medal; and at the exposition at Rouen, where it was rewarded with a silver medal.

26.—SIR GODFREY DE BOUILLON.

This is a work of extra-colossal dimensions, by M. Simonis, the original of which, in bronze, was inaugurated at Brussels in 1848. The knightly Crusader bestrides a war-horse of somewhat heavy proportions, which he has suddenly reined in, as he waves on high a flag as a rallying sign for his comrades in arms. There is considerable energy and spirit in the whole composition, which can but be appreciated when seen from the extreme east end of the galleries.

Godfrey de Bouillon, Duke of Lorraine, was one of the principal leaders of the Second Crusade; and the following brief account of a passage in his romantic career, from Mackay's "Memoirs of Extraordinary Popular Delusions," will be read with interest in connexion with the present subject:—

"Godfrey of Bouillon traversed Hungary in the most quiet and orderly manner. On his arrival at Mersburg he found the country strewed with the mangled corpses of the Jew-killers, and demanded of the King of Hungary for what reason his people had set upon them. The latter detailed the atrocities they had committed, and made it so evident to Godfrey that the Hungarians had only acted in self-defence, that the high-minded leader declared himself satisfied and passed on, without giving or receiving molestation. On his arrival at Philippopoli, he was informed for the first time of the imprisonment of the Count of Vermaindois. He immediately sent messengers to the Emperor, demanding the Count's release, and threatened, in case of refusal, to lay waste the country with fire and sword. After waiting a day at Philippopoli he marched on to Adrianople, where he was met by his messengers returning with the Emperor's refusal. Godfrey, the bravest and most determined of the leaders of the Crusade, was not a man to swerve from his word, and the country was given up to pillage. Alexius here committed another blunder. No sooner did he learn from dire experience that the Crusader was not an utterer of idle threats, than he consented to the release of the prisoner. As he had been unjust in the first instance, he became cowardly in the second, and taught his enemies (for so the Crusaders were forced to consider themselves) a lesson which they took care to remember to his cost, that they could hope nothing from his sense of justice, but everthing from his fears. Godfrey remained encamped for several weeks in the neighbourhood of Constantinople, to the great annoyance of Alexius, who sought by every means to extort from him the homage he had extorted from Vermandois. Sometimes he acted as if at open and declared war with the Crusaders, and sent his troops against them. Sometimes he refused to supply them with food, and ordered the markets to be shut against them, while at other times he was all for peace and goodwill, and sent costly presents to Godfrey. The honest, straightforward Crusader was at last so wearied by his false kindness, and so pestered by his attacks, that, allowing his indignation to get the better of his judgment, he gave up the country around Constantinople to be plundered by his soldiers. For six days the flames of the farm-houses around struck terror into the heart of Alexius; but, as Godfrey anticipated, they convinced him of his error. Fearing that Constantinople itself would be the next object of attack, he sent messengers to demand an interview with Godfrey, offering at the same time to leave his son as hostage for his good faith. Godfrey agreed to meet him, and whether to put an end to these useless dissensions, or for some other unexplained reason, he rendered homage to Alexius as his liege lord."

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